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ABSTRACT

In 1988, four studies were conducted to evaluate changes in the behavior and the knowledge of child nutrition on the part of participants in the Texas Nutrition Education and Training Program (NET). The NET Program operates synergistically with reimbursement elements of the U.S. Department of Agriculture's Child Nutrition Programs to improve children's nutrition. Preschool and school-age children are given opportunities to learn about and practice healthy eating habits. Individual studies concerned the performance of NET workshops, use of the NET Library, training as the preferred option for improving compliance with Child Care Food Program (CCFP) requirements, and participation in the NET Program. In the present report, results of these studies were integrated to develop an index and analysis of overall program performance. Results indicated a significantly positive effect for the program in 1988. Potential directions for program planning and development were: (1) expansion of the conceptual model on which the program is based; and (2) emphasis on improved coordination with related programs. Procedures and results of the separate studies are provided in appendices A through D. Results of the studies: (1) demonstrate the feasibility of coordinating agencies to attain objectives; (2) indicate the need for increased library use; (3) identify compliance errors that may be corrected through training; and (4) suggest ways to increase program participation. (RH)

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Performance of the Texas Nutrition Education and Training (NET) Program: October 1987 through September 1988

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Abstract

Four studies were conducted to evaluate changes in child nutrition related knowledge, attitudes, and behavior of participants in the Texas Nutrition Education and Training (NET) Program during 1988. In the present report, results of these four separate studies were integrated to develop an index and analysis of overall program performance. Results indicated a significantly positive effect for the program in 1988. All six of the statistically evaluated outcomes and the majority of the criterion referenced outcome evaluations were positive. Expanding the conceptual model on which the program is based and continuing to emphasize improved coordination with related programs emerged as strategic directions for program planning and development.

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EXECUTIVE SUMMARY

As in years past, the Nutrition Education and Training (NET) Program facilitated positive changes in child nutrition related knowledge and attitudes of substantial numbers of educators and food service personnel in schools and child care facilities in Texas during 1988.

Target Group	Outcome Indicators Monitored			Number	
	Knowledge	Attitude	Behavior	Study Participants	Program Participants
CHILDREN					5580
EDUCATORS					
Schools	+ +	+ +		238	430
Child Care					760
FOOD SERVICE PERSONNEL					
Schools					1060
Child Care	+ +	+ +	+	280	1490
PARENTS & OTHERS	–		-	90	1060

+ + = program area where positive outcomes were measured during 1988
- = area where the program had no measurable effect in 1988
unmarked = program areas where participation data were the only data collected during 1988

EXECUTIVE SUMMARY

The Nutrition Education and Training (NET) Program is a federally funded health promotion and disease prevention program administered in Texas through Food Services Programs Branch of the Department of Human Services. The goal of the NET Program is to work in synergism with reimbursement elements of the U.S. Department of Agriculture's Child Nutrition Programs to improve children's nutritional status by providing them with opportunities to learn about and to practice healthy eating habits in schools and child care settings. Texas NET Program staff develop and conduct workshops, provide lending library services, and distribute instructional materials to educators, food service personnel, and children. Evaluations of these activities are conducted annually to compile information about program successes, identify areas where improvements can be made, and determine strategic directions for program development.

Purpose and Procedure. During 1988, four studies were conducted to evaluate knowledge, attitude, and behavioral outcomes of the NET Program. Different methods (e.g., pre- and post-testing, mailed surveys, and analysis of program archives) were used to identify strengths and weaknesses of specific program activities. In the present study, results of these four were integrated to produce an index and analysis of overall program performance.

Results. All six of the statistically evaluated program outcomes were significantly positive. Of 15 criterion referenced comparisons, 11 were positive and none were negative.

* Child nutrition related knowledge and attitudes of educators and food service personnel were significantly better after NET workshops than before.

* Use of the NET library was greater in 1988 than in any previous year although a survey of staff in other DHS programs serving families and children indicated that very few of them were aware that the NET collection existed.

* In a study of Child Care Food Program (CCFP) reviews, training was identified as the preferred option for improving children's opportunities to practice healthy eating habits in child care settings.

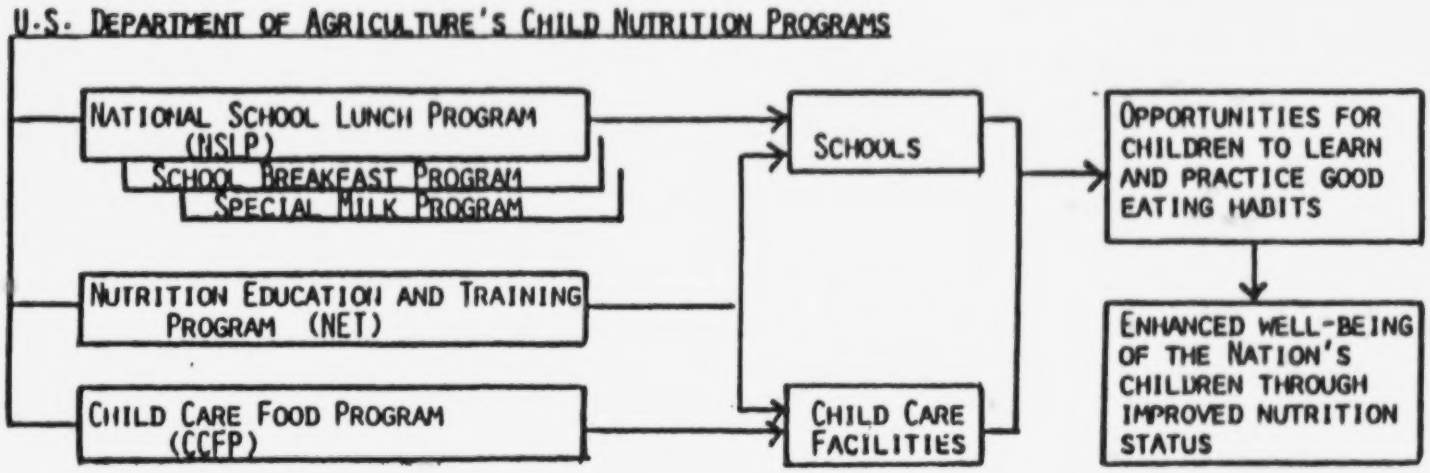
* Participation was approximately the same as in 1987 and 50 percent greater than in the baseline year of 1985.

As in years past, studies conducted during 1988 suggest that the Texas NET Program is more successful in promoting changes in knowledge and attitudes than in facilitating positive changes in child nutrition related behavior.

Conclusions and Recommendations. In addition to demonstrating program effectiveness, results of these studies reaffirm the need identified in previous years for research on factors that limit the power that educational programs have to effect behavioral change. This study also confirms the desirability of emphasizing coordination with other programs to meet the rising demand for NET workshops, library services, and materials and increase the contribution that NET makes to improving children's nutritional status.

BACKGROUND

The Nutrition Education and Training (NET) Program works in synergism with reimbursement elements of the Child Nutrition Programs to improve children's nutritional status by providing them with opportunities to learn about and to practice healthy eating habits in schools and child care settings.


U.S. DEPARTMENT OF AGRICULTURE'S CHILD NUTRITION PROGRAMS
NATIONAL SCHOOL LUNCH PROGRAM (NSLP)
SCHOOL BREAKFAST PROGRAM
SPECIAL MILK PROGRAM
NUTRITION EDUCATION AND TRAINING PROGRAM (NET)
CHILD CARE FOOD PROGRAM (CCFP)
SCHOOLS
CHILD CARE FACILITIES
OPPORTUNITIES FOR CHILDREN TO LEARN AND PRACTICE GOOD EATING HABITS
ENHANCED WELL-BEING OF THE NATION'S CHILDREN THROUGH IMPROVED NUTRITION STATUS

BACKGROUND

The Nutrition Education and Training (NET) Program is one of the U.S. Department of Agriculture's (USDA) Child Nutrition Programs. Its goal, like that of its sister programs, is to promote optimal health and well-being of the Nation's children through improved nutrition. The National School Lunch (NSLP), School Breakfast (SBP), Special Milk, Child Care Food (CCFP), and Summer Food Service (SFSP) programs reimburse nonprofit schools and child care facilities for serving meals and snacks that meet USDA's nutrition and food service requirements. The NET Program provides nutrition information and instructional resources for children and for key individuals in their learning environments--i.e., for teachers, food service personnel, and parents. In combination, the instructional and reimbursement programs seek to improve children's nutritional status by assuring that they have opportunities to learn about and to practice healthy eating habits in schools and in organized child care settings.

Texas NET staff develop and conduct workshops, provide lending library services, acquire and distribute nutrition education and food service management materials, and coordinate special projects designed to:

* reach children with information about nutrition and health;

* help integrate effective nutrition learning activities into instruction at all grade levels from preschool through high school; and

* assure that nutritious, appealing, safe meals and snacks are served in schools and child care facilities.

NET is a nationwide program established in 1977 in an amendment to the Child Nutrition Act (public law 95-166). The program is administered by the USDA through grants to state agencies. The Texas Department of Human Services (DHS) became active in NET in 1979, receiving a grant from the Texas Education Agency (TEA) to expand the public school based program in Texas into child care facilities. In 1982, when federal funding for the program had been reduced from $26 million to $5 million nationwide, TEA ceased to participate and DHS assumed responsibility for all NET Program activities in Texas.

The program is coordinated through DHS's Food Services Programs Branch which also administers NSLP, SBP, and Special Milk for private schools; CCFP; and SFSP. NET funding is based on the number of children in the state. In federal fiscal year 1988 (FFY88) Texas NET funding was $315000. The NET Program has been under continuing resolution in the U.S. Congress since 1982 and will be considered for reauthorization in 1989.

Regulations governing NET require that the program: 1) be coordinated at the state level by a nutrition education specialist; 2) maintain accurate and unduplicated counts of program participation; and 3) use results of annual evaluations and needs assessments to guide development and implementation of the State Plan.

PURPOSE

Evaluations of the Texas NET Program are conducted annually to compile information with which to demonstrate program success, identify areas needing improvement, and determine strategic directions for program development.

* Was the overall effect of the Texas NET Program in 1988 positive, negative, or nonsignificant?

* Did the Texas NET Program promote positive changes in child nutrition related knowledge, attitudes, and/or behaviors in NET's priority populations during 1988?

* What were relative strengths and weaknesses of overall program performance in 1988?

PURPOSE

In order to meet federal requirements for program evaluation and to collect information to help make the program as effective as possible, formal evaluation of the Texas NET Program was initiated in October 1984. Each year since then a number of studies have been conducted to develop information the General Accounting Office cited in 1982 as being necessary to:

* effectively administer the program;

* guide program revision and planning;

* ensure that federal funds are spent effectively; and

* supply the USDA with data to submit to the Congress to aid decisions about how to apportion scarce resources.

During 1987, four studies were conducted to answer the following questions about performance of the Texas NET Program:

1) How well did Nutrition and Physical Fitness, Nutrition and the Young Child, and Planning Nutritious Snacks workshops perform in helping Child Nutrition Program participants master nutrition knowledge and attitude learning objectives?

2) Is the NET lending library collection recognized as a valuable resource by health professionals and administrative staff of other DHS programs concerned with child care and child health issues?

3) Is training the preferred option for improving contractors' compliance with CCFP meal pattern requirements? and

4) To what extent did the NET Program achieve its participation goals during FFY88?

The separate studies served as close-up "snapshots" of strengths and weaknesses of specific program activities. In the present report, results of these four studies were combined to produce an index and analysis of overall program performance for the year. By integrating results across studies, a program "panorama" was developed to summarize program effectiveness and produce recommendations to aid strategic planning.

Key questions answered in this final analysis of data collected during 1988 were:

1) Was the overall effect of the Texas NET Program in 1988 positive, negative, or nonsignificant?

2) Did the Texas NET Program promote positive changes in child nutrition related knowledge, attitudes, and behavior of significant numbers of individuals in NET's priority populations? and

2) What were relative strengths and weaknesses of overall program performance during FFY88?

PROCEDURES

In this study, results of four evaluations of specific NET activities were integrated to develop an index and analysis of overall program performance in 1988.

Study	NET Activity: Outcome Indicators	Data Collection and Analysis Procedures
	WORKSHOPS:	
1a	Knowledge Tests	Single group (n=40/workshop) pre/post/follow-up comparisons evaluated using repeated measures analysis of variance
1b	Attitude Scales	Single group (n=40/workshop) retrospective pretest/posttest comparisons evaluated in repeated measures analysis of variance
	LIBRARY:	
2	Mailed Survey	Qualitative comparisons of perceptions and reported use of the library by staff in other DHS programs serving families and children
	SPECIAL PROJECTS:	
3	Archival Data	Cross-tabulations and regression analyses of data from CCFP review findings
	PARTICIPATION:	
4	Archival Data	Goal-percentaging by population groups and by NET activities using data compiled for the FNS-42 report to the USDA
OVERALL		Vote counting method for meta-analysis across all four studies

PROCEDURES

In order to develop information about overall effectiveness of the Texas NET Program, the vote counting method for program meta-analysis was applied to integrate results of four separate studies conducted during 1988. These studies included the following data collection and analysis procedures:

1) Workshop effects on child nutrition related knowledge and attitudes of teachers and food service personnel were evaluated by comparing performance on paper-and-pencil tests of knowledge and attitudes administered before and after the workshops. Repeated measures analysis of variance was used to test the statistical reliability of changes in test scores across the time series. In addition to these normative comparisons, criterion references were set such that 70 percent of the maximum possible score was considered "acceptable" performance and 90 percent or better was accepted as "ideal."

2) DHS staff perceptions and use of the NET lending library collection was assessed in a mailed survey of health professionals and management staff within programs serving families and children. Survey analysis methods were used to summarize findings and identify areas where changes can be made to improve use of the NET collection.

3) Options for improving contractors' compliance with CCFP requirements were evaluated in several cross-tabulation and regression analyses of data extracted from records of administrative reviews of the CCFP.

4) To evaluate program participation, the updduplicated counts made for the FNS-42 report required by the USDA were submitted to goal-percentaging procedures. Percent of goal attainment was calculated by program activity and by target group.

To apply the vote counting method for integrating results across these separate studies, counts were made of all findings that were significantly positive, negative, or nonsignificant. Tallies were compared and the modal category accepted as giving the best estimate of NET program effectiveness.

Because the second purpose of this report is to identify areas for future directions and program modifications, additional data were collected by interviewing program staff and reviewing records kept as part of the program's management information system--e.g., files from its automated workshop logs and from computer files compiling data from library users feedback forms. Information retrieved from these sources was used to describe program activities and compare program performance against performance in past years and against emerging trends in child nutrition and nutrition education.

RESULTS and DISCUSSION

Despite reductions in staff size, the number of workshops conducted, the number of library items circulated per month, the number of materials distributed, and the number of persons reached with NET resources all were greater in 1988 than in the baseline year of 1985.

Resources	FFY85	FFY86	FFY87	FFY88
BUDGET	294,060	294,060	295,860	315,290
STAFFING				
Coordinator	1.000	.300	.125	.750
Program Specialists	2.000	1.500	2.000	2.000
Evaluator	1.000	1.000	1.000	.850
Clerical Support	3.000	2.670	3.000	3.000
Consulting Nutritionists	2.000	1.900	1.800	1.600
	9.000	7.370	7.925	8.200
Activities				
WORKSHOPS				
Developed	2	2	3	1
Conducted	165	145	185	180
LIBRARY				
Acquisitions			180	420
Items Circulated/Month	70	100	100	150
Borrowers/Month	6	25	20	50
Catalogs Distributed	10,000	12,000	680	200
MATERIALS				
Acquisitions	5	5	15	
Distributions	9,700	10,800	12,800	17,200
SPECIAL PROJECTS				
Mini-grants/Development Contracts	3	3	2	
Evaluation/Needs Assessment Studies	6	7	6	5
Persons Reached	6,200	9,700	10,900	10,300

RESULTS and DISCUSSION

During 1988, NET Program funding increased slightly over 1987, staffing levels were approximately the same as in 1987 and less than in the baseline year of 1985, and productivity remained high.

The USDA's funding formula for the NET Program is based on the number of school children in the state. In Texas, the number attending public schools grew from 2,884,000 in 1985 to 3,569,500 in 1988 with a consequent increase in program budget from 294,000 to 305,000.

At the same time, organizational constraints have generated a reduction in NET staffing from nine full-time equivalent positions in 1985 (one coordinator, two program specialists, one evaluator, three clerical and administrative support staff, and 20 consulting nutritionists at approximately 1/10 of full-time) to approximately eight in 1988. There was a loss of 1/4 of the coordinator's time, a slight change in the evaluator's time, and a decrease from 20 to 16 consulting nutritionists). Despite constraints on staffing, however, the program continued to show strength in numbers of workshops conducted, numbers of library items circulated per month, and number of nutrition and food service management materials distributed.

Slightly more than 180 workshops were conducted for approximately 2,660 educators and food service personnel. One new workshop was developed: Menu Planning Recipe Ideas. Three workshop curricula were substantially revised--Kitchen Math and Food Purchasing, Menu Planning and Kitchen Economy, and Advanced Menu Planning--to increase their synergism with CCFP handbook materials and create a learning sequence so that each of the three workshops builds on and extends concepts and skills taught in the previous workshop. These changes were made in response to problems identified in previous evaluations of the workshops' effects on participant behavior.

More than 400 new titles were acquired for the NET lending library collection. The number of items circulated per month rose to 150 and the number of borrowers increased from 6 per month in 1985 to 50 per month in 1988.

During 1988, the NET Program made efficient use of its stock of nutrition education and food service management books, posters, and pamphlets distributing more than 17,200 items to child care facilities and schools represented in NET workshops.

In consequence of this high level of productivity, the number of persons reached with NET resources was approximately the same as in 1987 and more than 50 percent greater than in the baseline year of 1985. In 1988, there were 10,300 participants in the NET Program as compared with 6,200 in 1985.

The NET Effect Was Positive

All six of the statistically evaluated outcomes and the majority of the criterion referenced outcome evaluations were positive in 1988.

Activities Evaluated	Outcome Indicators Monitored		
	Knowledge	Attitudes	Behavior
WORKSHOPS			
Nutrition and Physical Fitness	+ + **	+ **	
Nutrition and the Young Child	+ + **	+ **	
Planning Nutritious Snacks	+ **	+ **	
LIBRARY			
Lending Procedures		+	+
Local Promotion	-		-
COORDINATION			
w/ Child Care Food Program			+
w/ Texas Education Agency			+
PARTICIPATION			
Children			+ +
Educators			-
Food Service Personnel			-

Statistical Evaluations: ** = significantly positive
Criterion Referenced Evaluations: + + = ideal + = acceptable - = needs improvement

Effectiveness of NET in 1988

When data were integrated across the five evaluation studies conducted during 1988, results indicated that the overall impact of the NET program in Texas continues to be positive. All six of the statistically evaluated program outcomes were significantly positive. Of 15 criterion referenced comparisons, 11 were positive.

Workshops were effective in promoting desired changes in child nutrition related knowledge and attitudes of educators and child care food service personnel. In all six analyses of workshop test results, performance on follow-up tests was acceptable (i.e., the average score on the follow-up test was at least 70 percent of the maximum possible score) and significantly better than before the workshop. Although many of the workshop participants already were possessed of acceptable levels of knowledge and attitudes before they attended the workshops, the improvements were substantial from before to after the workshops and suggest that all participants are better prepared to meet the nutrition and nutrition education needs of children in consequence of their participation in the workshops.

Efforts to promote use of the lending library collection were sporadically successful. Circulation increased again in 1988 and borrowers appeared favorably disposed toward the collection and the service. More than 85 percent of library users who returned completed user's feedback forms gave good or excellent ratings to the materials (85 percent) and the procedures for lending (90 percent) and returning (90 percent) the materials. The survey of staff in other DHS programs indicated, however, that additional effort is needed to promote use of the library collection in programs that serve NET's primary target audiences. Fewer than 20 percent of those surveyed reported that they were even aware that the NET collection existed although they expressed interest in learning more about it.

During the last two years, NET Program staff have increased their efforts to coordinate NET activities with those of related programs to increase the impact that NET can have on children's nutritional status. These efforts appear to be enjoying at least acceptable levels of success. During 1988, a special study of CCFP reviews indicated that training is the preferred option for increasing contractors' compliance and that content areas where training appears to be needed often matches training development activities that already are implemented or are part of the plan for future years. NET's efforts to coordinate its efforts with those of TEA in meeting training needs for teachers in public schools also show a satisfactory return on investment. Two of NET's workshops that were developed for public school teachers and approved for Advanced Academic Training by the Texas Education Agency attracted more than 600 participants during the first year they were available. These participants indicated high levels of satisfaction (averaging 3.8 on a 4-point scale) with the workshops.

Evaluation of program participation showed an average of 65 percent goal attainment during 1988. The program showed special strength in reaching children through the lending library.

Workshops Facilitated Changes in Knowledge and Attitude

Scores on tests of child nutrition related knowledge and attitudes were significantly higher after NET workshops than before.

	Average Scores				
	Knowledge Tests			Attitude Scales	
Workshop	Before	During	After	Before	After
NUTRITION AND PHYSICAL FITNESS	72	93	88	3.9	4.3
NUTRITION AND THE YOUNG CHILD	84	96	93	3.7	4.0
PLANNING NUTRITIOUS SNACKS	72	82	89	4.0	4.3

Workshop Effects on Knowledge and Attitudes

The 612 public school teachers and 230 child care personnel participating in workshops that were evaluated during 1988 showed significant improvement in knowledge and attitude test scores and expressed high levels of satisfaction with the format and content of the workshops.

Changes in knowledge and attitudes from before to after the Nutrition and Physical Fitness workshop were not only statistically significant but shifted the average score from below to above the preset criterion for ideal performance. After the workshop, the average knowledge test score was 93 percent correct. After the workshop eighty percent of the participants exceeded the criterion value of 4.0 on the attitude scale whereas only 39 percent had done so before.

For the Nutrition and the Young Child workshop, the average score on the follow-up test was above 90 percent correct. Although participants attained an acceptable level of performance (i.e., greater than 70 percent correct) even before the workshop, only 40 percent earned scores greater than 90 before the workshop. After the workshop, 80 percent of participants exceeded this criterion for ideal performance. Attitude scores increased from an average of 3.7 to 4.0. Although this change did not represent an ideal level of performance on the attitude scale, the improvement was statistically significant.

In the Planning Nutritious Snacks workshop, the average pretest score for nutrition knowledge was 70 percent, indicating a just barely acceptable level of knowledge going into the workshop. On the follow-up test, the average score was 85 percent correct. This increase was statistically significant. After the workshop 85 percent of the participants exceeded the criterion for acceptable performance and 50 percent gave correct answers to all items on the knowledge test. The average attitude scale value increased from 4.0 to 4.3. After the workshop 75 percent of the participants exceeded the criterion value of 4.0 for acceptable performance on the attitude scale compared with only 50 percent achieving this criterion level performance on the pretest. The change in attitude scores was significantly positive.

On the standardized workshop evaluation form administered at the close of the workshops, average scores were 3.8 for each of these workshops. This score was above the preset criterion of 3.5 on the 4-point satisfaction scale indicating that participants were uniformly satisfied with format, content, and presentation of these workshops.

More information about results of the study of workshop effects on knowledge and attitudes can be found in the evaluation report entitled Performance of Nutrition Education and Training Program Workshops for Public School Teachers that appears as appendix A to this summary report.

Staff Were Not Familiar with the NET Library

Approximately 80 percent of those responding to the NET library survey had never heard of the NET collection, but many of them indicated that in their work with DHS clients they have need of the kinds of materials available in the NET collection.

	Percent Responding							
Indicator of Need	License RD (n=8)	FSS-Child Development (n=6)	FSS-Manager (n=32)	FSS-Nurse (n=17)	FSS-RD/PD (n=15)	Food Ser Manager (n=9)	Volunteer Specialist (n=6)	TOTAL (n=93)
Had never heard of the NET library	100	80	90	100	75	0	70	80
Have need of information available through the library	100	100	80	100	85	100	85	90
Desire more information about the library	90	100	60	100	80	55	100	80

RD=Regional Director FSS=Family Self Support PD=Program Director Food Ser=Food Services Programs

Perceptions and Use of the NET Library

Although they expressed interest in learning more about the NET collection, approximately 80 percent of staff in Family Self Support, Licensing, and Food Services Programs who returned completed questionnaires in the survey conducted for the NET library indicated they had never before heard of the NET lending library collection. Among those few (i.e, 19 of 93 individuals who responded to the survey) who already were familiar with the library, the only actual users of the collection were 4 contract managers in Food Services Programs Branch and 2 Regional Directors in Family Self Support Branch.

As many as 60 to 100 percent of respondents in the different program areas indicated, however that it would be useful to them to receive a copy of the NET catalog. Approximately half (50 percent) also were interested in receiving a newsletter and/or order forms from the NET library.

When asked what kinds of nutrition related materials would be most useful in working with their clients, the majority (i.e., 50-65 percent) indicated need for books or pamphlets and/or video tapes on nutrition as it relates to child care, menu planning, and economy in food purchasing.

The survey respondents suggested that NET Program staff should make greater efforts to increase the visibility of the NET Program within DHS. Nurse consultants in the Health Services Program within Family Self Support Branch were more likely than those in other groups to express interest in meeting with staff of the NET Program to discuss ways the collection could be useful in their program.

Results of this study suggest that, although the NET library is not yet recognized as a valuable resource by health professionals and administrative staff in other DHS programs concerned with child care issues, personnel in these other programs are willing to learn more and perhaps to make greater use of the collection in the future.

More detail about methods and results of the survey are included in the evaluation report entitled Survey of Use of the NET Library in Other Programs Serving Families and Children that appears as Appendix B to this summary report.

Training Can Improve Compliance with CCFP Requirements

Inspection of CCFP contractors' training schedules indicated that those with higher overall compliance scores tended to conduct more training for more of their providers than did contractors with lower overall compliance scores.

Average Scores

	Level of Compliance		
	Low (n=10)	Moderate (n=13)	High (n=10)
Number Trained	7.1	7.2	14.0
Number of Topics Covered	5.0	4.8	7.6

Coordination with CCFP

The special study of CCFP review findings conducted during the summer of 1988 suggests that training is the preferred option for correcting errors that contractors often make in responding to CCFP requirements.

Inspection of the narrative sections of the review findings associated with eligibility verification showed that errors made in reporting household members' names and social security numbers were the most frequently occuring problems. The occurence of multiple errors on Forms 1531 (eligibility verification) was more frequent in the group of contractors whose overall compliance scores were low than in the moderate and high compliance groups.

The most frequently occuring errors on Forms 1530 (Daily Menu Records) were associated with amounts of food served. Irrespective of their overall level of compliance, many contractors failed to serve enough food. Milk was the item most often noted as being short of the minimum. Contractors in the low compliance group, however, also often had problems meeting the meal components provisions of the meal pattern requirements.

Results of several regression analyses indicated that variables related to the contractor's organizational size and procedures were unrelated to compliance. Training was the only factor that predicted overall compliance. Contractors with higher overall compliance scores tended to conduct training for more of their providers covering more topic areas than did contractors with lower overall compliance scores.

These data suggest that training is an important process for promoting compliance with CCFP requirements. By continuing to make use of its NET resources in emphasizing the importance of training, Food Services Programs Branch can expect to produce noticeable improvements in performance of the CCFP. The synergism of NET and CCFP will help to assure that children are served nutritious meals and snacks in child care settings.

More detail about the special study of CCFP reviews is included in the evaluation report entitled Is Training the Preferred Option for Improving Compliance with CCFP Requirements that appears as Appendix C to this summary report.

10,300 Individuals Participated in NET Activities During 1988

Although overall participation was as great in 1988 as in 1987 and 50 percent greater than in the baseline year of 1985, the program fell short of its goals for reaching educators and food service personnel through the NET lending library collection.

	PUBLIC SCHOOLS				PRIVATE SCHOOLS				CHILD CARE				AVERAGE
	85	88	G	%	85	88	G	%	85	88	G	%	%
WORKSHOPS													85
Children													
Educators	64	350/285		= 100	271	51/95		= 50	1241	717/570		= 100	
Food Service	5	110/95		= 100	233	59/95		= 60	264	1374/665		= 100	
LIBRARY													50
Children	864	4517/1175		= 100	365	182/0		= 100	1289	895/940		= 95	
Educators	85	30/470		= 5	0				102	44/470		= 10	
Food Service	356	890/235		= 100	0	1/235		= 0	79	117/940		= 10	
AVERAGE				80				50				60	65

85 = number of participants in 1985 88 = number of participants in 1988 G= goal for 1988

NET Participation

Although overall participation in the Texas NET Program has increased substantially since 1985--rising from 6200 to 10300--the program achieved only 65 percent of its participation goals during 1988. The program showed particular strength in its reach to children through the lending library collection. Based on experience in prior years and on priorities set for 1988, the goal was to reach at least 2115 children. The program succeeded, however, in reaching nearly 5800 children. Approximately 1190 educators, 2550 child care food service personnel, and 1060 parents and other individuals also were reached with NET resources during 1988.

Participation in NET workshops exceeded goals in public schools and child care institutions. Participation by staff in private schools, however, was only about 50 percent of the modest goals set for that population. Perhaps because of improved coordination with TEA, there was a notable rise in participation by public school personnel. Approximatley 20 percent of participants in 1988 compared with only 5 percent in 1985 were staff of public schools.

Approximately half of NET workshop participants during 1988 were food service personnel in child care centers and sponsors or day home providers in the CCFP. In 1985, only about 10 percent of NET workshop participants were from this primary target group.

Despite growth in its reach to children, the NET Program's lending library was less successful in achieving its participation goals. Across groups, the library averaged 50 percent goal attainment compared with 85 percent success for NET workshops. Nevertheless, the number of persons reached with NET library resources has more than doubled since 1985. In 1985, 3140 individuals were reached with library materials; in 1988, their numbers rose to 6675.

More detail about participation in the NET Program is included in the evaluation report entitled Participation in the Texas NET Program: October 1987 through September 1988 which appears as Appendix D to this summary report.

CONCLUSIONS

The overall impact of the NET Program in Texas was significantly positive in 1988.

* Program activities were effective:
  - Workshops facilitated changes in knowledge and attitudes;
  - The NET library attracted more patrons and circulated more materials than in any previous year;
  - Progress was made in coordinating NET activities with other public sector programs and agencies concerned with child nutrition.

* Participation remained high during 1988, helping the NET Program to accomplish its objectives in Texas.
  - More than 5800 children were reached with information about food and health;
  - Workshops helped approximately 1200 educators learn how to integrate nutrition learning activities into classroom instruction at all grade levels; and
  - Nearly 1700 food service personnel participated in workshops that helped them learn more about planning and serving nutritious meals and snacks for children.

CONCLUSIONS

As has been demonstrated each year since 1984, the overall impact of the NET Program in Texas was shown to be significantly positive. Many positive outcomes were measured and no negative outcomes were detected.

* Workshops were found, as in years past, to be reliable means for improving child nutrition related knowledge and attitudes of educators and food service personnel in schools and child care facilities that participate in USDA's reimbursement programs.

* Although studies conducted this year suggest need for continued attention to promoting its use by members of NET's priority populations, the lending library collection attracted more patrons and circulated more nutrition and food service management materials during 1988 than in any previous year.

* The NET Program made large strides toward improving coordination with other public sector programs and agencies engaged in child nutrition activities. The study of CCFP reviews provided strong endorsement for using NET resources to assure that children have opportunities to practice healthy eating habits in child care settings.

* The demand for NET services remained high across all target groups during 1988, with participation of public school personnel being a particular growth area.

These program successes helped the NET Program promote positive changes in child nutrition related knowledge and attitudes of significant numbers of individuals in NET's priority populations. The program therefore continued to excel in achieving its global objectives:

* More than 5800 children were reached with information about food and health in presentations that used materials borrowed from the NET lending library collection;

* Approximately 1200 educators in schools and child care facilities participated in NET workshops, thereby making statistically reliable improvements in their knowledge and developing more positive attitudes to support effective integration of nutrition learning activities into instruction for children at all grade levels from preschool through high school; and

* Nearly 1700 food service personnel participated in NET workshops, thereby learning more about how to plan and serve meals and snacks that are nutritious, appealing, and safe for children in schools and child care settings.

RECOMMENDATIONS

In addition to demonstrating that federal funds are being spent effectively and documenting need for continued support of the NET Program, results of this evaluation suggest strategic directions for program revisions and planning.

* NET Program staff should continue to seek ways to expand the theoretical model on which the program is based--In 1988, as in previous years, the Texas NET Program was shown to be more effective in changing knowledge and attitudes than in promoting desired changes in behavior.

* Program staff should continue to place strong emphasis on coordination with related programs and activities in order to stretch scarce resources and to reinforce each program's contributions to improving the health and well-being of children through improved nutrition.

RECOMMENDATIONS

The success of the NET Program in Texas does not mean, however, that there is no longer any need for the program. On the contrary, results of this year's evaluation studies combine with those from previous years to suggest that much yet remains to be done to assure that children have opportunities to learn about and to practice eating habits that will support their proper growth and health.

As in years past, evaluation studies conducted during 1988 suggest that NET is more successful in promoting changes in knowledge and attitudes than in facilitating positive changes in child nutrition related behavior.

* Of seven criterion referenced analyses of behavioral outcomes of the program during 1988, four were positive.

* Seven of eight criterion referenced comparisons of knowledge and attitudes were positive in 1988.

* When these results are combined with those from previous years, the tally is nine of eighteen (i.e., 50 percent) criterion comparisons for behavioral outcomes were positive where as twenty-six of twenty-eight (i.e., 90 percent) criterion comparisons of knowledge and attitude outcomes were positive.

These results reaffirm the need identified in previous years for research on factors that influence impact that educational programs can have in effecting behavioral change. It is recommended, therefore, that staff of the Texas NET Program continue to prepare articles for publication in professional journals and participate fully in professional conferences (e.g., annual meetings of the American Dietetic Association, the Society for Nutrition Education, and the American Evaluation Association) where this topic currently is being explored. The American Dairy Council's research grant competition for nutrition education research and practice is one source of information which promises to be especially relevant during the next two to five years.

In addition to seeking ways to expand the theoretical model on which the NET Program is based, there are changes that can be made in current activities to increase the immediate impact of the program in Texas. Each of the appendices in this volume includes discussion of specific strengths and weaknesses of the Texas NET Program. For example, it is recommended in Appendix B that NET program staff work with nurse consultants in the Health Services Programs to identify options for promoting visibility, appreciation, and use of the NET lending library by staff of other DHS programs serving families and children.

By continuing to emphasize improved coordination of NET activities with activities in other public sector programs concerned with child care and health issues, the Texas NET Program can develop strategies for meeting a rising demand for service and increasing its contribution to the health and well-being of children through improved nutrition.

EVALUATION REPORT

Performance of Nutrition Education and Training Program Workshops for Public School Teachers: February 1987-1988

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Abstract

Tests and questionnaires were administered before and after **Nutrition and Physical Fitness** and **Nutrition and the Young Child** workshops conducted by the NET Program for public school teachers in Texas. These workshops were approved by the Texas Education Agency (TEA) for Advanced Academic Training credits for the teachers. Analysis of the test and questionnaire data showed high levels of satisfaction with the workshops and significant improvements in child nutrition related knowledge and attitudes. These results help demonstrate the feasibility of continuing to work in coordination with other agencies to improve children's opportunities for learning about and practicing good eating habits in schools and child care settings.

EXECUTIVE SUMMARY

Nutrition Education and Training (NET) Program workshops were effective in communicating child nutrition related concepts and values to substantial numbers of public school teachers in Texas during the period February 1987 to February 1988.

Workshop	Number of Participants	Percent Exceeding Criterion			
		Knowledge Tests		Attitude Scales	
		Before	After	Before	After
Nutrition & Physical Fitness	438	65	86	39	80
Nutrition & the Young Child	174	81	99	31	66

EXECUTIVE SUMMARY

As part of the Texas Department of Human Service's efforts to coordinate instructional and reimbursement elements of the Child Nutrition Programs (CNP), interagency agreements and curriculum modifications were negotiated with the Texas Education Agency (TEA) for two of the Nutrition Education Training (NET) Program's workshops to be made available to public school teachers for advanced academic training (AAT) credits. Nutrition and Physical Fitness workshops were conducted February 1987 to July 1987 to provide nutrition information that would dispel many of the myths and misconceptions concerning nutrition and physical fitness. Nutrition and Young Child workshops were conducted February 1987 to December 1987 to assist teachers in preparing and conducting appropriate nutrition education lesson plans and cooking activities for the young children based upon a child's nutrition needs, habits, behaviors, and preferences.

Evaluation Procedures. This study was conducted to determine how well the workshops performed in improving participants' nutrition knowledge and attitudes. Tests and questionnaires administered before and after workshops provided data on participants' mastery of the learning objectives. In addition, an evaluation form administered at the close of the workshop measured participants' satisfaction with training they received during the workshop. Changes in knowledge and attitudes were evaluated using repeated measures analysis of variance. Criterion references also were used to evaluate participants' learning and satisfaction.

Results. Participants showed significant improvement in knowledge test and attitude scale scores and indicated high levels of satisfaction with the workshops. More than 85 percent exceeded the criterion for acceptable performance on the tests and scales administered after the workshops. There were few items on any of the tests or scales which fell short of acceptable performance.

Conclusions and Recommendations. The workshops helped teachers learn about nutrition and its relationship to physical fitness and concepts needed to prepare cooking activities and nutrition education lesson plans for children. It can be concluded that, because of their participation in NET workshops, teachers were better prepared to provide nutrition-learning activities to the children and to dissolve the myths regarding nutrition and physical fitness.

Alternatives for increasing the impact that brief, successful workshops like these can have in promoting behavior change include a) providing teachers with a formal plan and obtaining their agreement to follow that plan; b) conducting follow-up visits or interviews a few months after the workshop to encourage obligation and strong sense of commitment; and c) providing workshops for superintendents and other school administrators.

BACKGROUND

To support the U.S. Department of Agriculture's goal of improving health and well-being of the Nation's children through improved nutritional status, the Texas Nutrition Education and Training (NET) Program works with the Texas Education Agency (TEA) to make nutrition training and instructional resources available to public school teachers.

* 1985: NET conducted a survey to assess nutrition training and resource needs of public school teachers.

* 1986: State Plan was amended to increase emphasis on reaching public schools with NET resources.

* 1987: TEA approved two NET workshops for Advanced Academic Training for teachers--**Nutrition and Physical Fitness** and **Nutrition and the Young Child.**

BACKGROUND

Conducting nutrition education workshops to prevent disease and enhance well-being of the State's children is a major activity of the Texas Nutrition Education and Training (NET) Program. The program supports and enhances effects of reimbursement elements of the U.S. Department of Agriculture's(USDA) Child Nutrition Programs (CNP). By providing information and resources to instruct teachers, child care providers, and food service personnel in the fundamentals of nutrition and how to convey this information so as to motivate children to make healthy food choices, the NET Program helps children accept the nutritious meals and snacks served in school cafeterias and child care settings. The expected outcomes are improved nutritional status for children and reduced food waste in school and child care food service programs.

As part of the NET Program's efforts to coordinate effects of instructional and reimbursement elements of CNP, NET program staff work with personnel in the Child Care Food Program (CCFP) administered through TDHS and in National School Lunch Program (NSLP). In Texas, the NSLP for public schools is administered through the Texas Education Agency (TEA). In 1985, the Texas NET Program conducted a survey of public school teachers to assess their needs and preferences for nutrition training and materials. Based on results of that study and on guidance from the regional office of the USDA, an explicit objective in the NET Program's amended state plan for 1986 was to place increased emphasis on reaching public schools with NET resources.

During 1986, interagency agreements and curriculum modifications were negotiated to win TEA's approval for two of the NET Program's workshops to be made available to public school teachers for advanced academic training (AAT) credits. Public school teachers are required to earn AAT credits to maintain their teaching certification in Texas. The two workshops--Nutrition and the Young Child and Nutrition and Physical Fitness--became available for credit in February, 1987.

These workshops, like other NET Program workshops, are conducted free of charge by registered dietitians in the participants' own communities. Exercises at the close of each section of the workshop curriculum provide feedback to participants about their mastery of specific learning objectives. Many of the exercises involve group problem-solving. Frequent use is made of audio-visual aids. These features of the instructional process help to communicate the objectives more effectively and to keep participants motivated to master the learning objectives.

PURPOSE

This study was conducted to determine how well the workshops performed in helping teachers master child nutrition related knowledge and attitude learning objectives.

* After the workshops, did participants know more than they did before about nutrition and health concepts and how to convey this information to motivate children to make healthy food choices?

* Did participants have more positive attitudes about nutrition education after the workshops than they did before?

* Were participants satisfied with their experiences in the workshop?

* What were relative strengths and weaknesses of workshop performance?

PURPOSE

This study was conducted to determine how well the Nutrition and Physical Fitness and Nutrition and Young Child workshops performed in helping participants master nutrition related knowledge and attitude learning objectives.

The Nutrition and Physical Fitness workshop is considered a success if, after the workshop, participants are able to:

* describe the benefits of following an exercise program and adequate diet;
* identify proper and improper diet habits for the physically active person;
* identify key points about the importance of drinking sufficient fluid and the proper techniques for replacing waste loss;
* describe what foods provide the needed energy for different activities;
* plan appropriate pre-game meals and discuss the advantages and disadvantages of carbohydrate loading; and
* explain how food intake and exercise can be adjusted to gain, lose, or maintain weight.

The Nutrition and the Young Child workshop is considered a success if, after the workshop, participants are able to:

* associate specific learning situations with each nutrition concept;
* identify appropriate amounts and types of food needed for a child;
* identify three major nutrition-related health problems;
* develop and present classroom cooking activities; and
* prepare nutrition lesson plans.

Data describing changes in participants' knowledge and attitudes related to these concepts are needed for three reasons. First, information about the extent to which the workshops are successful in communicating child nutrition related concepts to members of the NET Program's target population are needed to help document program impact. In addition to being useful in accounting to the public for the way federal funds are spent, program effectiveness data are needed to support requests to USDA for continued funding of the Texas NET Program.

The second reason workshop performance data are needed is to help identify areas where changes can be made to improve the curricula. By identifying areas where participants have already achieved mastery before the workshop and identifying areas where mastery is not achieved even after the workshop, this study provides information workshop trainers can use in making decisions about how to allocate learning time during the workshop. For the curriculum developer, this study provides information to aid in directing how the curricula can be revised and updated to make them effective as possible. Finally, data about performance of these two workshops are required to help make decisions about content and format of training still needed to enhance children's opportunities to learn and to practice healthy eating habits.

PROCEDURES

Tests and questionnaires administered before and after workshops provided data on participants' mastery of knowledge and attitude learning objectives and their satisfaction with the workshops.

Workshops	Number	Participants	Complete Data Sets		
			Knowledge	Attitudes	Satisfaction
NUTRITION AND PHYSICAL FITNESS	22	438	77	97	438
NUTRITION AND THE PRESCHOOL CHILD	10	174	31	32	111

PROCEDURES

Tests and questionnaires administered before and after workshops provided data on participants' mastery of knowledge and attitude learning objectives. An evaluation form administered at the close of the workshop measured participants' satisfaction with the workshop. In nutrition education programs, outcomes generally are measured in terms of changes in participants' nutrition knowledge, attitudes, and behaviors. Comprehensive models for instructional system design and evaluation, however, also emphasize the importance of participant satisfaction. This study, therefore, included measures of knowledge, attitudes, and satisfaction.

Test and questionnaire items were adapted from standardized nutrition knowledge and attitude tests supplemented with items written by Texas NET Program staff. The reading level for these data collection instruments were evaluated using Fry's method. Items and instructions were adjusted as necessary to assure the instruments required no higher than ninth grade reading level.

Workshop trainers administered the pre-and post-tests of knowledge at the beginning and close of the workshop. The follow-up test and attitude questionnaire were mailed to independent samples of workshop participants approximately two months after the close of the workshop. Samples of 50 to 100 participants per workshop (depending on attendance figures) were selected according to the last digit in their Social Security Number (SSN). Knowledge tests were mailed to those whose last digit was odd and attitude questionnaires were mailed to those whose last digit was even.

There were 438 participants in Nutrition and Physical Fitness workshops. All participants completed the evaluation forms used to measure satisfaction with the workshop. Ninety-seven Nutrition and Physical Fitness attitude questionnaires and 110 follow-up tests were returned. Seventy-seven of the follow-up tests could be matched to pre- and post-test records.

There were 174 participants in the Nutrition and Young Child workshops. One hundred-eleven participants completed workshop satisfaction evaluation forms. There were 32 questionnaires and 31 follow-up tests returned. Only 50 attitude and 50 follow-up test questionnaires were mailed. Although 32 attitude and 31 follow-up questionnaires and tests seems a small sample, these figures represent a response rate of 62 percent which is considered good (50 percent is adequate and 60 percent is good). Twenty-two of the follow-up tests could be matched to pre- and post-test records.

Measuring and Analyzing Changes in Knowledge

Test items sampled factual and operational knowledge needed to master workshop objectives.

NUTRITION AND THE YOUNG CHILD

OFFICE USE ONLY		
Type		
pre	post	fl/c
1	2	(3)
Version		
1	(2)	3
Workshop ID		

Exercise

Your Social Security Number: ___ ___ ___

Today's Date: Mo/ Day/ Yr

___ ___ ___

Directions. Read each item carefully. For each item CIRCLE the number next to the ONE BEST ANSWER.

1. Nutrients are found in the foods we eat and are essential for human health. The functions of these nutrients include:

   1 growth of body tissues
   2 repair of body tissues
   3 providing a source of energy
   4 prevention of disease
   5 all of the above are correct

2. The Nutrition Education and Training (NET) Lending Library Collection:

   1 can only be used by persons who have attended NET workshops
   2 is a good resource to use when developing classroom activities to teach nutrition
   3 requires borrowers to appear in person to pick up and return materials
   4 charges a small fee for checking out materials
   5 all of the above are correct

3. Which of the following terms describes a GROUP of essential nutrients needed to carry oxygen to tissues, strengthen bones, and prevent iron deficiency anemia?

   1 vitamins
   2 carbohydrates

MEASURING AND ANALYZING CHANGES IN KNOWLEDGE

Test items sampled factual and operational knowledge needed to master workshop objectives. One of the items of the test administered in the Nutrition and Physical Fitness workshop, for example, asked participants to identify the benefits of physical conditioning. Another required them to select a good pre-game meal.

Each test item had five response alternativesin a multiple choice format. Participants were instructed to select the one best response alternative for each item.

To assure that the tests were representative of workshop content, their validity was checked by matching test items to the specification table for each workshop curriculum. Test reliability was checked by using SPSS-X procedure for computing coefficient alpha. Assessed reliability was .63 (n=438) for the Nutrition and Physical Fitness and .51 (n=174) for the Nutrition and Young Child. These figures were judged to be fair since a test created using mastery approach gives low reliability due to ceiling effect.

In order to evaluate workshop performance, test scores were used to determine the gains in performance for each participant over time using the same test. The same items were used on tests to assure consistency of the participants responses to before, during, and after the workshop. The item sequence was varied, however, to reduce the effects of test-specific memory. The version used as pre-, post-, and follow-test was counterbalanced across workshops conducted on different dates.

Scores on tests administered before, at the close (i.e., during), and after the workshop were compared to determine what effect the curricula had on mastery of knowledge objectives. Criterion references were preset such that 70 percent correct was considered acceptable and 95 percent correct signified mastery. Statistical significance of observed gains was evaluated using SPSS-X procedures for repeated measures analysis of variance. When scores were found to be higher after the workshop than before, it was concluded the curriculum facilitated learning and promoted changes in knowledge.

In order to diagnose relative strengths and weaknesses of the curriculum, goals were set for specific items and actual performance compared against the goal. For knowledge tests, the goal was 70 percent correct. If 70 percent of the participants responded correctly, it was concluded that mastery of the content of that item was well represented in the population of workshop participants. This criterion was used to identify content areas in which mastery existed before the workshop, to identify areas in which mastery was facilitated by the workshop curriculum, and to diagnose areas where the curriculum needs improvement.

Measuring and Analyzing Attitude Change

Questionnaire items were written to measure attitudes toward teaching nutrition to young athletes and young children.

NUTRITION AND PHYSICAL FITNESS

Follow-up Questionnaire

SECTION I

Instructions: Please CIRCLE the number that best describes how you feel about each of the following statements.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Athletes need to understand that water is an essential nutrient.	1	2	3	4	5
2. Athletes should be encouraged to practice Classical Glycogen Loading	1	2	3	4	5
3. Teachers should provide their students with information about nutrition and its relationship to physical fitness	1	2	3	4	5
4. It is very important for athletes to learn proper techniques to replace water loss. . . .	1	2	3	4	5
5. Vitamins and minerals are among the most abused nutrients in athletics.	1	2	3	4	5
6. Thirst is a very good indicator of water needed during athletic competition	1	2	3	4	5
7. Salt tablets are potentially dangerous	1	2	3	4	5
8. Teachers should encourage athletes to follow a diet that gives greater emphasis to complex carbohydrates.	1	2	3	4	5
9. Physical conditioning can improve work capacity	1	2	3	4	5
10. Diet is one of the most important factors which influence physical performance	1	2	3	4	5
11. It is important for students to learn the benefits of following an exercise program and an adequate diet	1	2	3	4	5
12. The MET Lending Library is a good place to get information and materials to help students learn about nutrition and physical fitness . . .	1	2	3	4	5

MEASURING AND ANALYZING ATTITUDE CHANGE

Questionnaire items were written by members of the NET Program staff to measure attitudes toward nutrition and its relationship to physical fitness and planning and preparing cooking activities for young children. One of the items on the questionnaire for Nutrition and Physical Fitness, for example, asks whether the participants agree that salt tablets are potentially dangerous. Another question asks whether they agree on how important it is for athletes to learn proper techniques for replacing water loss.

Items on the questionnaires formed a Likert-type scale. The scale ran from 5=strong positive to 1=strong negative. Respondents were asked to report their current attitudes and then indicate retrospectively what their attitudes were before the workshop. Advantages of using this procedure were: 1) data could be collected about attitudes before and after the workshop without taking up valuable workshop time, and 2) it assured that participants had the same frame of reference for reporting their attitudes before and after the workshop. There are some disadvantages in using this technique. For instance, respondents are asked to do something that is psychologically difficult to do because they have to put themselves in another place and time. However, for the type of study being conducted, this disadvantage is not considered a problem.

Content validity of the attitude scale was assessed by checking items against the table of specifications for the workshop curriculum. Scale reliability was derived using SPSS-X procedures for calculating Cronbach's coefficient alpha. Assessed reliability was .75 (n=77) for the Nutrition and Physical Fitness questionnaire and .72 (n=32) for the Nutrition and Young Child scale. These figures were judged to be fair, especially since measurement of nutrition attitudes often is problematic. Due to the limited number of items in these scales, it is difficult to accurately sample the content. A second constraining factor was the ceiling effect that was encountered: respondents mostly used the positive end of the scale. When there is high agreement among respondents, reliability coefficients tend to be low because of the restriction in range.

Average attitude scale values reported before and after the workshop were compared. Criterion references were preset such that 4.0 represented acceptable levels of favorability and 4.5 represented mastery of attitude learning objectives. Statistical significance of changes in attitude scores was evaluated using SPSS-X procedures for repeated measures analysis of variance.

Measuring Satisfaction

Standardized questionnaires developed by TDHS's Staff Development Division were used to measure teachers' satisfaction with the workshops.

Texas Department of Human Resources

STAFF DEVELOPMENT AND TRAINING REPORT
SESSION INFORMATION

Form 4318
Page 3, Rev. 7-83

[redacted]

INSTRUCTIONS: For each item listed below, please **CIRCLE** the most appropriate number to reflect your evaluation.

6 ITEM	EVALUATION 1 Not At All	2 Somewhat	3 Well	4 Very Well	COMMENTS
1. Objectives were communicated:	1	2	3	(4)	[redacted]
2. Instructor's presentation and manner helped you to meet the objectives:	1	2	3	(4)	[redacted]
3. Instructor provided opportunity for discussion, comments, and questions:	1	2	3	(4)	[redacted]
4. Course content helped you to meet the objectives:	1	2	3	(4)	
5. Handouts, audio visuals, etc., helped you to meet the learning objectives:	1	2	3	(4)	

6. What part(s) of the session will be most helpful to you in doing your job?

7. What part(s) of the session will be least helpful to you in doing your job?

MEASURING SATISFACTION

Standardized questionnaires developed by TDHS's Staff Development Division were used to measure participants' satisfaction with the workshop. Respondents were asked to evaluate the workshop on the five dimensions. They used a 4-point scale to indicate whether or not:

* objectives were communicated;
* instructor's presentation and manner helped meet the objectives;
* instructor provided opportunity for discussion, comments, and questions;
* course content helped meet the objectives; and
* handouts, audio-visuals, etc., helped meet the learning objectives.

Each item is scaled from 1="not at all" to 4="very well". The criterion for acceptable levels of satisfaction was set at 3.0. Ideal levels would be 3.5 to 4.0 on the 4-point scale.

RESULTS

Participants indicated high levels of satisfaction with the workshops and showed significant, positive changes in knowledge and attitude scores.

	Outcomes		
Workshop	Satisfaction	Knowledge	Attitudes
Nutrition & Physical Fitness	High	+ + *	+ *
Nutrition & the Young Child	High	+ + *	+ *

+ = acceptable + + = mastery * = significant improvement

RESULTS

Participants showed significant improvement in knowledge and attitude and indicated high levels of satisfaction with the workshops. This was especially clear for the Nutrition and Physical Fitness workshop.

Changes in knowledge and attitudes from before to after the Nutrition and Physical Fitness workshop were not only statistically significant but shifted scores above the preset criteria for acceptable and mastery level performance. After the workshop, the average knowledge test score was 93 percent, well above the 70 percent set as criterion for acceptable performance. Eighty percent of the participants exceeded the 4.0 criterion level on the attitude scale after the workshop whereas only 39 percent exceeded this criterion before the workshop. These results indicate that participants learned the material presented at the workshop.

For the Nutrition and Young Child workshop, the average score on the follow-up test was above 90 percent correct indicating that mastery level was achieved in concepts and skills needed by the teachers to prepare and conduct appropriate nutrition education lesson plans and cooking activities. Although the participants attained acceptable performance of 84 percent even before the workshop, only 40 percent of the participants exceeded mastery level compared to 80 percent exceeding the mastery level after the workshop. Attitude scores were above 4.0 indicating positive attitude toward concepts presented in the workshop.

Participants indicated high levels of satisfaction. On the workshop evaluation form administered at the close of the workshops average scores attained were above the criterion value of 3.5 (3.8 for Nutrition and Physical Fitness and 3.8 for Nutrition and the Young Child) on the 4-point participant satisfaction scale.

Effects of Nutrition and Physical Fitness Workshop

Participants showed improvement in performance on tests of knowledge and attitudes about nutrition and physical fitness and gave the workshop high ratings.

	Average Score				
Scale	Before	During	After	Criterion	Maximum
Satisfaction		3.8		3.5	4.0
Knowledge	72	93	88	70	100
Attitude	3.9		4.3	4.0	5.0

EFFECTS OF NUTRITION AND PHYSICAL FITNESS

Participants showed improvements in performance on tests of knowledge and attitudes about nutrition and its relationship to physical fitness and gave the workshop high ratings.

* At the close of the workshop, 86 percent of the participants exceeded the criterion for acceptable performance on the knowledge test (70 percent correct response). Although 65 percent of the participants already scored at or above the criterion at the beginning of the workshop, the participants exceeding mastery level was only 19 percent at the beginning of the workshop compared to 71 percent at the close of the workshop. Average percent correct before, during, and after the workshop were 72, 93, and 88 (raw score averages of 11.5, 14.8 and 13.9 with standard deviations of 2.5, 1.6 and 2.0). The drop in the follow-up score is expected due to the time period that elapsed between testing. The improvement in knowledge test performance was substantial and statistically significant, $F(2,77)=82.95$, $p<.001$.

* Eighty percent of the participants scored above the criterion value of 4.0 on the 5-point attitudes scale after the workshop. Before the workshop, only 39 percent had scores as high as 4.0. Average scores were 3.9 and 4.3 before and after the workshop. This improvement was substantial and statistically significant, $F(1,96)=94.28, p, <001$.

* The average workshop rating was 3.8 (sd=.4), indicating participants were very well satisfied with the workshop.

There were no differences in knowledge test scores for the 77 individuals whose pre-, post-, and follow-up test records could be matched and those for the 438 individuals whose pre- and/or post-test data were available. It can be concluded that the sample was representative of the entire population of participants in the Nutrition and Physical Fitness workshop.

Test performance in workshops with high and low Hispanic participants suggested that the curriculum was more effective for the predominantly Hispanic population workshops. Workshops with more than 50 percent Hispanic participants showed lower pretest but higher posttest scores than the workshops with less than 20 percent Hispanic participants. Average pretest scores were 10.4 (SD=2.9) and 11.7 (SD=2.4) for the high and low Hispanic groups, respectively. Average posttest scores were 15.4 (SD=.9) and 14.8 (SD=1.6). These differences were statistically significant, $t(386)=2.71.$, $p < .05$ and $t(372)=1.76$, $p<.05$.

Knowledge

Acceptable performance was reached for all items on the knowledge test by the close of the **Nutrition and Physical Fitness** workshop.

Percent of Participants Giving Correct Answers to Questions on the Knowledge Test

Items	Before	During	After
(6) Aerobic activity	86	99	96
(1) Nutrition is ...	96	98	100
(11) Use of energy	90	97	96
(15) Source of energy	76	97	94
(9) Nutrition & fitness education	83	96	96
(13) Target heart rate	83	96	98
(4) Physical conditioning	91	94	95
(8) Nutrition guidelines	90	93	96
(16) NET library	75	88	84
(14) Water	76	86	92
(12) Amount of water	55	95	76
(10) Pre-game meal	54	91	81
(7) Calories & water	57	91	83
(5) Vitamins	52	90	76
(3) Complex carbohydrates	69	90	88
(14) Carbohydrate loading	14	83	50
Average percent correct	72	93	88
Average raw score	11	15	14
standard deviation	2.5	1.6	2.0

KNOWLEDGE

At the beginning of the workshop, acceptable performance was already achieved for 10 of the 16 items on the knowledge test. The majority of the workshop participants knew what nutrition was (item 1); benefits of physical conditioning (item 4); what an aerobic activity was (item 6); nutrition guidelines for the healthy person (item 8); when to begin providing nutrition and fitness education (item 9); that weight loss occurs when you use up more energy then your intake of food or drink (item 11); that during aerobic activity, the intensity at which you work should be close to your target heart rate (item 13); the importance of water to our body (item 14); and that the best source of energy is complex carbohydrate food (item 15). Eighty-four percent of the workshop participants also knew before the workshop how to use the NET lending library collection (item 16).

Acceptable performance was reached for all items by the close of the workshop. The curriculum especially helped participants learn that the disadvantages of classical carbohydrate loading is increased chances of dizziness, fatigue, and irritability (item 2); what a complex carbohydrate food is (item 3); that athletes as well as non-athletes have the same daily requirements for vitamins (item 5); increased calories and water are the main differences in diet for a physically active person versus one who is not (item 7); a good pre-game meal is moderate in protein, limited in fat, ample in complex carbohydrate, about 500 calories, and is eaten at least three to four hours before the event (item 10); and the amount of water to drink for every pound of water loss during exercise (item 12).

When participants were questioned two months after the workshop, acceptance level was achieved on all items except for item 2. Although the score for this item was much higher in the follow-up test compared to the scores at the beginning of the workshop, follow-up test scores indicated that participants still had difficulty answering this question about classical carbohydrate loading. For items 1, 8, and 13 performance was better in the follow-up test than at the close of the workshop.

Attitudes

After the **Nutrition and Physical Fitness Workshop**, participants gave positive or strong positive reponses to every item on the attitude scale.

Average Scale Value of Responses* to Items on the Attitude Scale

Items		Before	After
(1)	Water is essential nutrient	4.3	4.9
(4)	Replace water loss	4.1	4.8
(11)	Benefits of adequate diet	4.4	4.8
(3)	Techer providing information	4.4	4.7
(9)	Physical conditioning	4.4	4.7
(10)	Physical performance	4.2	4.5
(7)	Salt tablets	3.8	4.4
(12)	NET library is useful	3.3	4.4
(8)	Teachers encourage athletes	3.7	4.2

*Responses Scale: 1=Strong Negative
5=Strong Positive

ATTITUDES

After the Nutrition and Physical Fitness workshop, participants gave positive or strong positive responses to every item on the attitude scale except for items 2, 5, and 6. More than 70 percent of the workshop participants were strongly positive that water is an essential nutrient (item 1); teachers should provide students with information regarding nutrition and its relationship to physical fitness (item 3); importance of athletes' learning proper techniques to replace water loss (item 4); physical conditioning can improve work capacity (item 9); and the importance of students learning the benefits of following an exercise program and an adequate diet (item 11).

The majority (50 percent or more) also were strongly positive that salt tablets are potentially dangerous (item 7); diet is one of the most important factors which influence physical performance (item 10); and that the NET lending library is a useful resource (item 12). Eighty-six percent of the participants held positive to strong positive attitudes toward teachers encouraging athletes to follow a diet that gives greater emphasis to complex carbohydrates (item 8).

The results from items 2, 5, and 6 indicated that respondents were confused, perhaps due to the format of the questions. Participants should have perceived items 2 and 6 as negative questions and should have strongly disagreed. For instance, for item 2, "athletes should be encouraged to practice classical glycogen loading", 37 percent agreed to strongly agreed, 34 percent neutral, and 29 percent disagreed to strongly disagreed. For item 5, "vitamin and minerals are among the most abused nutrients in athletics", 11 percent disagreed, 39 percent neutral, and 50 agreed to strongly agreed. For item 6, thirst is a very good indicator of water needed during athletic competition", 53 percent agreed to strongly agreed, 7 percent neutral and 41 percent disagreed to strongly disagreed. Analysis of the relationships among items on the test showed items 2,5, and 6 to have a negative discrimination index indicating that they measure the opposite of what the other items are measuring. These items were dropped from further analyses.

Attitudes before the workshop showed that the majority (50 percent or more) of participants had positive attitudes about most of the items, except for item and 12. Performance on item 12 rose to acceptable levels after the workshop. Before the workshop only 21 percent showed positive to strongly positive attitude. After the workshop 88 percent of the participants had positive to strongly positive attitude toward the NET library usage.

Satisfaction

More than 95 percent of participants in the **Nutrition and Physical Fitness** workshop gave it high ratings on every dimension measured.

Dimensions Rated	Percent Responding 'Very Well'	'Well'	Average Score
Communication of objectives	80	19	3.8
Trainer's presentation & manner	73	24	3.7
Opportunities for discussion	83	14	3.8
Course content	73	24	3.7
Handouts & Visual Aids	79	19	3.7

SATISFACTION

More than 95 percent of participants in the Nutrition and Physical Fitness workshop gave it high ratings on every dimension measured. The workshop earned 3.7 to 3.8 for all dimensions.

Effects of Nutrition and the Young Child Workshop

Participants showed improvement in performance on tests of knowledge and attitudes about nutrition and young children and gave the workshop high ratings.

	Average Score				
Scale	Before	During	After	Criterion	Maximum
Satisfaction		3.8		3.5	4.0
Knowledge	84	96	93	70	100
Attitude	3.7		4.0	4.0	5.0

EFFECTS OF NUTRITION AND YOUNG CHILD

Participants showed improvement in performance on tests of knowledge and attitude about nutrition and young children and gave the workshop high ratings.

* At the close of the workshop, 99 percent of the participants exceeded the criterion for acceptable performance on the knowledge test (70 percent correct response). At the beginning of the workshop 81 percent already scored at or above the criterion. Average percent correct before, during, and after the workshop were 84, 96, and 93 (raw score average of 13, 14, and 14 with standard deviations of 1.3, 0.8, and 1.7). The average raw score did not reflect much change, but the improvement was statistically significant, $F(2,42)=18.92$, $p<.001$.

* Nearly two-thirds (i.e., 66 percent) of the participants scored above the criterion value of 4.0 on the 5-point attitude scale after the workshop. Before the workshop, only 31 percent reported scores as high as 4.0. Average scores were 3.8 and 4.1 (standard deviations of .45 and .34) before and after the workshop. This improvement was statistically significant, $F(1,27)=26.72$, $p<.001$.

* The average rating was 3.8 (SD=.3), indicating participants were very well satisfied with the workshop.

* There was little difference in knowledge test scores for the 22 individuals whose pre-, post-, and follow-up test records could be matched and those for the 174 individuals whose pre- and/or post-test data were available. It can be concluded that the sample was representative of the entire population of participants in the Nutrition and the Young Child workshops.

There was no evidence of the cultural bias in the tests. Average pretest score for workshops with more than 50 percent Hispanic participants and less than 20 percent Hispanic participants were 12.3 (SD=1.5) and 11.9 (SD=2.0) respectively. Average scores for the posttest were 13.6 (SD=1.2) and 13.8 (SD=1.5) for the high and low Hispanic groups.

Knowledge

By the close of the **Nutrition and the Young Child** workshop, acceptable performance was attained for all items on the knowledge test.

Percent of Participants Giving Correct Answers to Questions on the Knowledge Test

Items	Before	During	After
(6) Functions of nutrients	97	100	96
(1) Nutrition is ...	98	99	93
(10) Learning experiences for children	96	98	100
(2) Needs for nutrients	83	97	93
(5) Preference for 5-6 small meals/day	86	97	100
(11) Cooking activities	86	97	85
(14) Promotion of nutrition education	90	97	100
(13) Preschool curriculum	85	97	93
(15) Water as essential nutrient	74	95	96
(7) Encouraging children	90	92	93
(8) Influences on children's eating habits	91	91	89
(12) NET library	78	91	74
(9) Nutrition related health problems	68	96	93
(3) Vitamin A	36	79	82
(4) Minerals	39	71	59
Average percent correct	84	96	93
Average raw score (maximum value was 15)	13	14	14
standard deviation	1.3	0.8	1.7

KNOWLEDGE

At the beginning of the workshop, acceptable level of knowledge test performance was achieved by 81 percent of the participants. The majority of the workshop participants already knew nutrition is the food you eat and how the body uses it (item 1); all persons throughout life need the same nutrients but in different amounts (item 2); preschool children prefer five to six small meals a day (item 5); nutrients in the foods we eat are essential for growth of body tissues, repair of body tissues, sources of energy, and prevention of disease (item 6); encouraging children to taste or eat what they helped to cook is a good tip for preparing and presenting cooking activities (item 7); parents, nutrition education, other children, and shapes and textures of foods can influence eating habits of young children (item 8); learning experiences in nutrition education should be fun, involve parents, involve the child's senses, and provide "hands-on" experiences (item 10); cooking activities should be evaluated to ensure that the activity is teaching basic nutrition concepts (item 11); parents, teachers, and food service personnel are an effective team for the promotion of nutrition education (item 14); and water is an essential nutrient which is the medium of all vital body fluids (item 15).

Seventy-eight percent of the participants knew that NET Lending Library Collection is a good source to use when developing classroom activities to teach nutrition (item 12) and 82 percent knew about the PRESCHOOL NUTRITION EDUCATION CURRICULUM that was developed by the Florida Nutrition Education and Training Program (item 13).

Acceptable performance was attained for all items by the close of the workshop. The curriculum especially helped the participants learn that a good food source of vitamin A needs to be provided every other day in the child's diet (item 3); minerals are nutrients needed to carry oxygen to tissues, strengthen bones, and prevent iron deficiency anemia (item 4); and iron-deficiency anemia, obesity, and dental caries are the three major nutrition-related health problems of children (item 9).

When participants were questioned two months after the workshop, acceptance level was achieved on all items except for item 4 (function of minerals).

Attitudes

After the **Nutrition and the Young Child** workshop, every item on the attitude scale showed at least 75 percent of participants positive or strongly positive.

Average Scale Value or Responses* to Hems on the Attitude Scale

Items		Before	After
(4)	Good eating habits	4.4	4.8
(12)	Regular exercise/Proper diet	4.5	4.7
(3)	Classroom cooking activities	4.0	4.6
(5)	Teach nutrition in schools	4.2	4.5
(1)	Drinking milk	4.3	4.5
(9)	Teachers encourge children	4.2	4.3
(10)	Making food choices	4.1	4.3
(14)	Be active participants	4.0	4.1
(2)	Schools teach nutrition	3.9	4.3
(15)	NET library is useful	3.3	4.1
(7)	Nutrition education	3.6	4.0
(11)	Snacks	3.6	3.9
(13)	Growth chart	3.3	3.9
(6)	Relationship between food & health	3.6	3.8

*Responses Scale: 1=Strong Negative
5=Strong Positive

ATTITUDES

After the workshop, every item showed at least 75 percent of participants positive or strongly positive.

More than 90 percent of the workshop participants were positive to strongly positive that drinking milk only is not an indication of good eating habits (item 1); they are interested in classroom cooking activities that involve the children (item 3); teachers and parents should work together to help children learn good eating habits (item 4); it's important that children be taught nutrition in schools (item 5); teachers should encourage children to try new foods (item 9); children need regular exercise and proper diet to stay healthy (item 12); and NET library is a good place to get information about nutrition (item 15).

More than 75 percent also were positive to strongly positive that schools should teach nutrition (item 2); learning the relationship between food and health is important for children (item 6); even with all the other subjects being taught in school, nutrition education needs to be included (item 7); children are not born with an instinct for making wise food choices (item 10); children should not necessarily be taught to avoid snacks (item 11); growth chart is an important tool for detecting possible nutrition problems (item 13); and young children learn more when they are active participants (item 14).

Item 8 was excluded from analysis of workshop performance because it had a negative discrimination index. Forty-three percent of the participants disagreed to strongly disagreed and 57 percent agreed to strongly agreed that parents have more influence over children's eating habits than anyone or anything else. Thus it appeared that participants were confused by the negative statement format of the item.

Attitudes before the workshop showed the majority (50 percent or more) of the participants had positive to strongly positive attitude about most of the items except for item 15. For item 15, NET library, only 36 percent showed positive to strongly positive before the workshop. After the workshop 82 percent of the participants had positive to strongly positive attitude toward the NET library usage.

Satisfaction

More than 95 percent of participants in the **Nutrition and the Young Child** workshop gave it high ratings on every dimension measured.

Dimensions Rated	Percent Responding 'Very Well'	'Well'	Average Score
Communication of objectives	84	16	3.8
Trainer's presentation & manner	78	21	3.8
Opportunities for discussion	97	3	3.9
Course content	78	22	3.8
Handouts and visual aids	76	22	3.7

SATISFACTION

More than 95 percent of participants in the Nutrition and the Young Child workshop gave high ratings on every dimension measured. The workshop earned 3.7 to 4.0 for all dimensions measured.

CONCLUSIONS

The Nutrition and Physical Fitness and **Nutrition and the Young Child** workshops performed very well in promoting positive changes in teachers' child nutrition related knowledge and attitudes.

* There were significant improvements in knowledge and attitude scale scores.

* By the close of the workshops, the vast majority of participants exceeded criteria for acceptable performance and many performed at the mastery level on the knowledge and attitude tests.

* Participants were well satisfied with their NET workshop experiences.

* The cumulative effect of repeated, positive experiences like these can help teachers change their behaviors in ways that more effectively integrate nutrition instruction into the curriculum for public school students.

CONCLUSIONS

In general, results indicate significant, positive impact for the Nutrition and Physical Fitness and Nutrition and the Young Child workshops. Participants were satisfied with the workshops and knew more and held more favorable attitude after than before the workshops.

Perhaps because the participants in these workshops were teachers, the majority appeared to have substantial prior knowledge concerning nutrition. Their pretest performance was very good. However, participants exceeding the mastery level increased to a significant level after the workshops. Thus, results of the workshops demonstrate that workshops helped teachers learn more about nutrition and its relationship to physical fitness and the necessary concepts to plan and coordinate cooking activities and lesson plans.

Although the results of knowledge and attitudes testing indicated significant gains in performance, significant behavioral change based on one day intervention usually is not a reasonable expectation in terms of observable behavioral change. However, accumulation of effects of these types of interventions ultimately will lead to changes in behavior.

The scores on the follow-up tests given two months after the workshop tended to be slightly lower than the posttests administered at the close of the workshop. This is to be expected in view of the time that elapsed between testing. Also, follow-up test scores indicated that there were a few items that participants consistently had difficulty answering. Possible explanations are 1) format of the questions 2) alternatives presented were confusing and 3) participants did not learn the materials. These problematic items need additional study. If results of further studies indicate that the items are not good items, revisions can be made either by rewriting the items or substituting new items.

The assessed reliability coefficient for the knowledge test for both workshops were not as high as expected. However, there are factors that affected these reliability coefficients which should not be overlooked.

* When a sample of participants is highly homogeneous, as in these workshops where all the participants were teachers, the reliability estimates will be lower than if the sample were more heterogeneous.

* Shorter tests will be less reliable than the longer tests.

* When a test is created using mastery approach, (e.g., p=70 percent as in this study), this gives low reliability due to ceiling effect.

In view of these factors, it is probably sensible to assume that these coefficients do not necessarily reflect that the tests were not representative of workshop content.

RECOMMENDATIONS

There are several options for increasing the impact that single, brief, positive workshops like these can have in helping teachers change their behavior in ways that will more effectively integrate nutrition instruction into the curriculum for public school students.

* If a specific plan for making changes in classroom activities or lesson plans is negotiated at the close of the workshop, behavioral intentions will be clarified and a rudimentary system will be established for self-referent feedback about progress toward the goal of integrating nutrition instruction into the curriculum.

* Because behavior in the workplace is strongly influenced by expectations and priorities of supervisory and administrative staff, it is important that efforts to reach school superintendents and principals with the same messages that are being communicated to teachers.

* By preventing disease and promoting proper growth and health, good nutrition averts future health care costs and increases children's opportunities to grow into self-sufficient adults. It is important, therefore, for the NET Program to work cooperatively with the TEA to promote effective nutrition education in schools.

RECOMMENDATIONS

Following are some recommendations to make the workshops and the evaluation more effective.

(1) A score distribution which is skewed due to a ceiling effect, as was observed for those workshops, is susceptible to regression toward mean. One way to correct the problem is to include more difficult items. These additional items would allow the test score distribution to more accurately reflect the distribution of the contents being measured. Another possibility is, rather than using a repeated measures design, to consider an ANCOVA design with posttest as dependent variable, pretest as covariate and another site as the control or comparison group.

(2) Attitudes and behaviors can be altered through intervention such as the workshops. The most direct techniques that can be used to modify the behavior of person is through direct command from a person of authority who possess as the means for enforcing them. If the participants were aware that sites would be inspected a few months after the intervention, chances are greater that there would be some noticeable changes due to obligation and strong sense of commitment to perform the actions requested by the authority figure.

(3) Participants may have the knowledge and attitude but when it comes to implementing what they have learned, there may be other constraints that they might not have control over (e.g. superintendents', priorities). In view of this, workshops geared toward the individuals who are in control can be considered as an option.

(4) The participants in the workshops conducted had positive or strong positive attitudes which can eventually lead to behavior changes. Taking this one step further, it is also possible for change in behavior to lead to change in attitude. The combination of expressed behavioral intentions and positive attitudes can have even greater impact in mediating behavior changes. If they have a set plan or guideline of plans to follow, the teachers are able to observe their own actions and infer that they do indeed hold the attitudes implied by these actions thus leading to behavioral and attitude change. Providing teachers with a formal plan and obtaining their agreement to follow that plan may be one way to increase the impact of the workshops.

It is exciting and encouraging that these nutritional programs are provided for public school teachers. Importance of these interventions can not be stressed enough since teachers are the individuals who influence, shape, and mold much of the children's attitudes and beliefs. Since unlearning is much harder than learning, nutrition education programs need to be provided at an early age to help children acquire good eating habits. Children who are taught to make healthy food choices will grow into adults who make healthy food choices. By preventing disease and promoting proper growth and health, good nutrition averts future health care costs and increases children's opportunities to grow into self-sufficient adults.

Appendix B

EVALUATION REPORT

SURVEY OF USE OF THE NET LENDING LIBRARY IN OTHER PROGRAMS SERVING FAMILIES AND CHILDREN

Ann Buller, Selena Sullivan, and Cindy Roberts-Gray
Nutrition Education and Training (NET) Program 560W
Texas Department of Human Services
P.O. Box 2960
Austin, Texas 78769

September 30, 1988

Responses to a short questionnaire mailed in July 1988 indicated a surprisingly strong need for improved coordination and increased use of the Nutrition Education and Training (NET) Program's lending library collection among other Texas Department of Human Services programs for families and children.

	Percent Responding							
Indicator of Need	License RD (n=8)	FSS-Child Development (n=6)	FSS-Manager (n=32)	FSS-Nurse (n=17)	FSS-RD/PD (n=15)	Food Ser Manager (n=9)	Volunteer Specialist (n=6)	TOTAL (n=93)
Had never heard of the NET library	100	80	90	100	75	0	70	80
Have need of information available through the library	100	100	80	100	85	100	85	90
Desire more information about the library	90	100	60	100	80	55	100	80

RD=Regional Director FSS=Family Self Support PD=Program Director Food Ser=Food Services Programs

EXECUTIVE SUMMARY

The Nutrition Education and Training (NET) Program's lending library collection is one of the key elements in the state plan for promoting children's health and well-being through improved nutrition. Part of the federally funded Child Nutrition Programs, NET primarily serves educators, food service personnel, and children in schools and child care facilities participating in the Child Care Food Program (CCFP), National School Lunch (NSLP), School Breakfast, Special Milk, or Summer Food Service Program. Its target population also includes, however, parents and others interested in child nutrition.

Purpose. This study was conducted to assess need and identify options for encouraging increased use of the NET library collection by staff of other Texas Department of Human Services (DHS) programs concerned with child nutrition issues. Encouraging improved coordination and use of the NET library by staff of other, related programs is expected to 1) increase the NET Program's reach to its primary target group and 2) assure efficient use of federal and state resources allocated to support child health and nutrition.

Procedures. A questionnaire was mailed to selected DHS staff members to assess current knowledge and use of the collection, determine what kinds of nutrition related materials would be most useful in these other programs, and solicit suggestions for improving coordination of NET library services. Selection of individuals to participate in this survey was based on discussions with administrators in DHS programs serving families and children. Questionnaires were mailed to staff in Family Self-Support, Day-Care Licensing, and Food Services Programs, and to regional Volunteer Specialists.

Results and Conclusions. The majority of respondents were unfamiliar with the NET library. They indicated, however, that information available through NET's lending library service would be useful to them in their work. Books/pamphlets and video tapes on nutrition as it relates to child care, menu planning, and food purchasing were the types of materials in which respondents appeared to be most interested. More publicity and increased interaction between NET staff and staff in related programs were the most frequent suggestions which survey respondents offered for improving coordination and use of the NET collection.

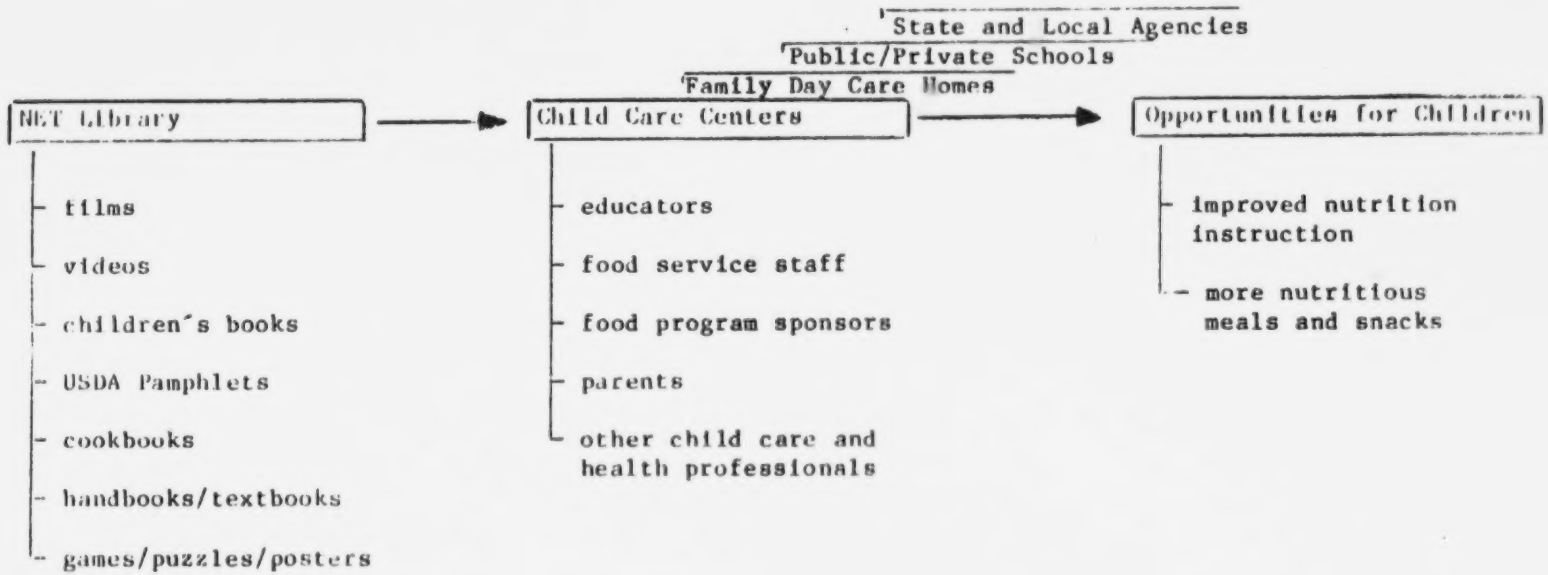
Recommendations. Alternatives for publicizing the collection and increasing interaction between programs include the following:

* Provide survey respondents with copies of the NET catalog, supplies of forms for borrowing items from the collection, and a periodic NET newsletter.

* Because nurse consultants in the Family Health Services Program expressed more consistent interest in NET services than did staff in other program areas, arrange meetings with them to develop plans for facilitating each program's efforts to educate DHS clients about the relationship between nutrition and health.

BACKGROUND

The Nutrition Education and Training (NET) Program's lending library collection is an important part of the state's plan for reaching children with opportunities to learn about and to practice eating habits that prevent disease and promote proper growth and health.



BACKGROUND

Circulating up-to-date, high quality nutrition related materials through its lending library collection is one of the Nutrition Education and Training (NET) Program's primary strategies for promoting nutrition learning in schools and child care facilities throughout the state. By providing educators, food service personnel, food program sponsors, parents, and others interested in child nutrition with ready access to materials with which to teach children about nutrition and help food program personnel plan nutritious meals, the library contributes to the U.S. Department of Agriculture's (USDA) goal of maximizing children's health and well-being through improved nutritional status.

The NET collection, which is housed in the library facilities at the headquarters offices of the Texas Department of Human Services (DHS), includes materials on nutrition education, food service management, and related topics such as diet therapy. Materials are available in audio-visual and printed media. Circulation is managed by the NET Program's librarian. Requests to borrow items from the collection are made by mailing a preprinted order form or by calling the librarian. Materials are delivered and returned by post or parcel service. Patrons are strongly urged to insure the full value of items in return shipment to the library so that the risk of loss in transit is minimized. Other than the cost of return postage and insurance, however, use of the NET lending library is free of charge.

To encourage use of the collection, the NET Program has compiled a set of media catalogs. The catalog entry for each item includes a synopsis of an evaluation made by the NET Program's consulting nutritionists together with information about format, content, and target audience. Copies of the catalogs are distributed to child care facilitites and schools participating in the Child Care Food Program and other USDA Child Nutrition Programs administered by DHS. Copies also are mailed to public schools that express interest in using the collection.

As prescribed in federal guidelines, priority populations for NET services are children, educators, and food service personnel in schools and child care facilities participating in the Child Nutrition Programs. Previous evaluations of NET Program performance indicate, however, that one of the most promising alternatives for increasing NET's impact in Texas is to expand coordination with related programs.

Encouraging improved coordination and increased use of the NET library by staff of other, related programs has at least two advantages. First, it increases the NET Program's reach. In 1987, for example, the number of children reached through the NET library increased dramatically when members of the Texas Agricultural Extension Service began using NET materials in presentations made to public school children. Second, because it reduces the probability of duplicate development or acquisition of nutrition teaching materials, improved coordination of NET library services assures more efficient use of federal and state resources allocated to support child health and nutrition.

PURPOSE and PROCEDURES

In order to identify alternatives for improving coordination and increasing use of the NET lending library, a needs assessment questionnaire was mailed to selected staff of other DHS programs serving families and children.

NET LENDING LIBRARY SURVEY
July 1988

1. The Nutrition Education and Training (NET) Program maintains in the DHS library at the Winters Center a collection of more than 2000 printed and audiovisual materials on topics in nutrition and health, food service, and nutrition education for children. Which of the following best describes your knowledge and use of the NET collection? (mark as many as apply)

   1 never heard of it -----> skip to question 4
   2 am familiar with the collection
   3 have never used the collection
   4 have borrowed items from the collection for my own use
   5 have used materials from the collection in my work with clients
   6 have recommended that clients use materials from the collection

2. How did you first learn about the NET library collection?

   1 attended a NET workshop
   2 received copies of the NET media catalog
   3 read about it in a journal (e.g., Texas Child Care Quarterly)
   4 heard about it through colleagues/networking
   5 saw the materials while I was in the library in the Winters Center
   6 other (please specify) _____

3. The catalog referred to in question 2 is a two volume book published by the NET Program to describe lending procedures and provide users with annotated descriptions of items available in the collection. Which of the following best describes your knowledge and use of the catalog? (mark as many as apply)

   1 have never seen it
   2 have seen it, but it's not located where I can use it easily
   3 have my own copy
   4 have used the catalog at least once
   5 use the catalog on a regular basis

4. In your work, do you receive requests or have need for information or materials about food and nutrition as they relate to any of the following? (mark as many as apply)

   1 health maintenance and disease prevention
   2 teen pregnancy and parenting
   3 child care
   4 menu planning
   5 economy in food purchasing
   6 special diets (e.g., diabetes, cholesterol, sodium restrictions)
   7 sanitation or sanitary practices
   8 other (please specify)
   9 None of my clients have needed information about food and nutrition -----> Skip to question 7

PURPOSE AND PROCEDURE

This study was conducted to assess needs and identify options for encouraging increased use of the NET library collection by staff of other DHS programs concerned with child nutrition issues. A questionnaire was mailed to selected DHS staff members to solicit answers to three broad questions about the NET collection:

1. Is the NET library collection recognized as a valuable resource by health professionals and administrative staff in other DHS programs that are concerned with child nutrition issues?

2. What kinds of nutrition-related materials and library services do staff in other programs believe would be most useful in working with their clients?

3. What suggestions do staff in other programs have for improving coordination between NET library services and their programs' needs for nutrition teaching resources?

Based on preliminary discussions with administrators in DHS programs serving families and children, questionnaires were mailed in July, 1988 to the following program personnel: 16 child development specialists, 50 contract managers in Family Self-Support, 18 contract managers and program specialists in Food Services Programs, 19 nurse consultants and supervisors in Family Health Services, 11 regional directors and coordinators for Day Care Licensing, and 11 regional volunteer specialists. Courtesy copies of the questionnaire were mailed to assistant commissioners, program directors, regional administrators, and regional directors of the related programs.

The questionnaire contained nine pre-coded, closed-end questions and two open-end questions inquiring about the respondents' experience with the NET collection, topic areas in which they receive requests for or have need of information about food and nutrition, and suggestions for improving coordination and performance of NET library services.

RESULTS

The majority of respondents were unfamiliar with the NET library but were interested in learning more about it.

Percent Responding

Question and Response Options	License RD (n=8)	FSS-Child Development (n=6)	FSS-Manager (n=32)	FSS-Nurse (n=17)	FSS-RD/PD (n=15)	Food Ser Manager (n=9)	Volunteer Specialist (n=6)	TOTAL (n=93)
Which describes your knowledge & use of the library?								
* never heard of it	100	80	90	100	75	0	70	80
* never used it	0	20	5	0	5	55	30	10
* have recommended it	0	0	5	0	5	70	0	10
* have used it	0	0	0	0	15	40	0	5
Which would be useful to you?								
* NET catalog	90	100	60	100	80	55	100	80
* NET newsletter	50	40	40	70	40	75	70	50
* order forms	50	80	30	90	45	55	80	50
* Spanish listing	25	40	10	30	30	45	30	25
* NET reviews	25	0	5	30	10	20	0	10
* none	0	0	25	0	10	0	0	10

RD=Regional Director FSS=Family Self Support PD=Program Director Food Ser=Food Services Programs

RESULTS

Approximately 80 percent of the respondents to this survey indicated they had never before heard of the NET lending library collection (question 1). The majority of the respondents in each of the programs that were included in the survey indicated interest in learning more about the library and the NET Program.

The response rate was high. Completed questionnaires were received from 62 percent of the target respondents (78 of 125) and 52 percent of the individuals to whom courtesy copies were sent (15 of 29). Four additional completed questionnaires were received, but the address labels had been removed from these four making it impossible to determine their affiliation. These four individuals each indicated that they had never heard of the collection and did not have need of NET library services at this time. They were not included, therefore, in the totals that were used in computing percent of response to other questions on the survey questionnaire. Nurse consultants in the Family Self Support branch were the most responsive. Nearly all (90 percent) of them returned completed questionnaires. Child Development Specialists were least likely to respond: less than 40 percent of them returned completed questionnaires.

Among those few (i.e., 19) individuals who already were familiar with the NET library, the only actual users of the collection were 4 contract managers in Food Services Programs branch and two Regional Directors in Family Self Support Branch.

In answer to a question about how they had first learned about the NET lending library, a few individuals (i.e., 3) in Food Services Programs Branch heard about it during their attendance at one of the NET Program's workshops (question 2). Others (15 individuals) heard about the library through colleagues and networking. Although 2 individuals reported they had learned about the library when they received a copy of the NET catalog, 11 others indicated that they had never seen the catalog. Only 1 person had used the NET media catalog (question 3).

As many as 60 to 100 percent of respondents in the different program areas indicated, however, that it would be useful to them to receive a copy of the NET catalog (question 7). Approximately half (50 percent) also were interested in receiving a newsletter and/or order forms from the NET library. Less than a fourth of the respondents expressed interest in a list of nutrition education materials available in Spanish. Very few were interested in having NET's registered dietitians review and evaluate materials their programs were considering acquiring. Practically none of the respondents liked the idea of integrating materials their program uses into the NET collection. Nor were they interested in obtaining library searches on specific topics.

As a group, the Nurse Consultants were more interested than the population of survey respondents in each of these services. Regional Directors for Child Care Licensing also appeared to be relatively more interested than other groups in the service alternatives.

Types of Material Desired

Books/pamphlets and video tapes on nutrition as it relates to child care, menu planning, and economy in food purchasing were the types of materials in which respondents appeared to be most interested.

Question and Response Options	License RD (n=8)	FSS-Child Development (n=6)	FSS-Manager (n=32)	FSS-Nurse (n=17)	FSS-RD/PD (n=15)	Food Ser Manager (n=9)	Volunteer Specialist (n=6)	TOTAL (n=93)
	Percent Responding							
Do you receive requests or need information about nutrition and these topics?								
* child care	90	80	55	55	80	70	0	60
* menu planning	100	80	40	60	30	100	15	50
* food economy	60	60	40	75	20	80	30	50
* health maintenance	25	60	30	100	30	20	15	40
* teen pregnancy	0	20	40	100	40	10	0	40
* sanitation	90	60	30	50	25	70	15	40
* special diets	0	40	20	100	25	55	30	35
What format do you prefer for this information?								
* books/pamphlets	40	40	75	75	85	20	80	65
* video tapes	90	40	55	30	45	70	20	50
* guides/curricula	50	60	40	30	40	45	20	40
* films/strips/slides	10	100	25	30	40	90	0	35
* teaching aids	40	0	30	55	20	10	80	35

RD=Regional Director FSS=Family Self Support PD=Program Director Food Ser=Food Services Programs

Types of Materials Desired

When asked what kinds of nutrition related materials would be most useful in working with their clients, the majority (i.e., 50-65 percent) of respondents indicated need for books or pamphlets and/or video tapes on nutrition as it relates to child care, menu planning, and economy in food purchasing (questions 4 and 5). All of the respondents in child care licensing and in food services programs indicated need for information about menu planning.

Across groups, substantial numbers (i.e., 35-40 percent) of the respondents indicated they also receive requests for or have need of information about nutrition as it pertains to health maintenance, teen pregnancy, and special diets (e.g., diabetes). All of the nurse consultants who responded to this survey indicated need for nutrition information related to these three subjects.

Although book and pamphlet formats for nutrition related materials was the most frequent choice across respondents, there were noticeable differences among groups. Respondents in licensing and in food services more often expressed a preference for video than did respondents in other program areas. Child development specialists joined contract managers in food services programs in the desire to have nutrition information available in films, filmstrips, and slide presentations. Volunteer specialists expressed greater interest in teaching aids (e.g., posters). Only one person, a contract manager in Family Self Support, indicated an interest in audio resources.

In the past, when they have needed information or materials about food and nutrition, the survey respondents were likely to use resources available through community agencies such as the Heart Association or Cancer Institute and/or from program specialists at DHS or in other state programs such as the Women, Infants, and Children's Supplemental Feeding (WIC) Program administered through the Texas Department of Health (question 6). A few (approximately 15 percent) sometimes called on public libraries, college and university resources, and/or health professionals in private practice.

Prior to this study, very few of the respondents would have called on the NET Program's nutritionists for information. Only about a third (i.e., 30 percent) were aware that DHS has licensed dietitians on staff (question 10).

Suggestions for Program Improvement

The majority of respondents who made suggestions about how to improve coordination and use of the NET lending library services indicated that additional information about the NET Program should be made available to DHS staff and clients.

Question and Response Options	Percent Responding: License RD (n=8)	FSS-Child Development (n=6)	FSS-Manager (n=32)	FSS-Nurse (n=17)	FSS-RD/PD (n=15)	Food Ser Manager (n=9)	Volunteer Specialist (n=6)	TOTAL (n=93)
Would you participate in these activities?								
* receive information	90	80	45	75	70	55	70	65
* meet with NET staff	10	20	10	60	30	45	25	30
* share information	50	40	25	50	25	30	30	30
* receive this report	10	40	10	40	25	30	70	30
* suggest additions	10	0	0	5	10	10	0	5
* none	0	0	35	0	5	10	0	15
What suggestions do you have?								
* more publicity								25
* staff interactions								10
* information to clients								5
* adjust procedures								5
* none								55

RD=Regional Director FSS=Family Self Support PD=Program Director Food Ser=Food Services Programs

Suggestions for Program Improvement

Efforts to make the NET Program more visible within DHS was the most frequent suggestion that respondents made regarding alternatives for improving coordination and use of the lending library collection. More than half (i.e., 65 percent) indicated interest in receiving more information (e.g., a brochure) about the library collection, and nearly a third (30 percent) reported they would be interested in sharing information about the NET library with their colleagues (question 8).

Nurse consultants in the Health Services Program were more likely than those in other groups to express an interest in meeting with staff of the NET Program to discuss ways the collection could be useful in their program. Nearly a third (30 percent) of the respondents wish to receive a copy of the current report on results of the NET library survey. Practically none of the respondents expressed willingness to suggest resources that should be added to the NET collection. A few respondents (15 percent), most notably contract managers in Family Self Support, indicated they have no interest in promoting coordination or use of the NET collection at this time.

Approximately 45 percent of the survey respondents made comments in response to the open-ended question soliciting their suggestions for improving NET library services (question 9). The most frequent suggestion (i.e., volunteered by 25 percent of the survey respondents) was that the library needed more publicity. Examples of comments made in this regard are that an article should be published in WE magazine, there should be outreach to schools, and simply that the NET program needs "more publicity." A few individuals suggested more interaction between the NET Program and other DHS programs. For example, it was suggested that NET distribute a newsletter, that NET staff make presentations or talks for other programs, that there should be closer ties with licensing, that DHS nurse consultants be asked to review films for the library, and that NET staff meet with DHS's Volunteer Coordinator.

Some (5 percent) suggested that more information be provided to DHS clients. Others (5 percent) suggested adjustments in lending library procedures. Examples of suggestions regarding information to DHS clients were that information should be provided to Title XX providers, that Food Program contractors be required to participate in NET workshops, and that brochures or library listings be made available to Family Self Support contract managers in quantities sufficient to distribute to contractors. Examples of suggestions regarding adjustments in procedures include making sure that materials are written simply, deleting information about cost of materials from the NET media catalog, and establishing a toll free reference line, and placing videos and films in DHS regional libraries.

CONCLUSIONS AND RECOMMENDATIONS

By investing additional effort in promoting the use of its lending library collection by staff and clients in other DHS programs serving families and children, the NET program can increase the impact of federal dollars allocated to support child health and nutrition.

* Need for increased emphasis on coordinating NET Library services with other DHS Programs serving families and children was found to be surprisingly strong.
  - o Only a few of those surveyed were aware of the NET library.
  - o The majority indicated need for nutrition information available through the library.
  - o Survey respondents were receptive to learning more about NET and its library.

* Several alternatives for promoting improved coordination and use of the NET library were suggested.
  - o Copies of the NET catalog and order forms should be distributed as requested.
  - o Meetings between NET staff and nurse consultants in the Family Health Services Program can facilitate their respective efforts to inform DHS clients about the relationship between food and health.
  - o A newsletter or brochure for program administrators to share with staff and clients can be developed and distributed to publicize the NET collection.
  - o Consideration should be given to replicating this study during the coming year to evaluate progress and explore additional options for increasing efficiency and effectiveness of NET lending library services.

CONCLUSIONS and RECOMMENDATIONS

Results of this study indicate a surprisingly strong need for improved coordination and use of the NET lending library among DHS programs serving families and children. This need is indicated by the fact that:

* Eighty percent of the survey respondents had never heard of the NET lending library;

* Ninety percent of the survey respondents in-dicated that information available through NET's lending library service would be useful to them in their work; and

* More than three-fourths (i.e., 80 percent) re-ported that they would like to receive more information about the NET Program and/or its lending library.

Information and suggestions supplied by the survey respondents suggest several alternatives for improving coordination and use of the NET library collection among DHS programs:

* Many of the survey respondents said they would like to have a copy of the NET catalog (80 percent) and to receive a supply of forms needed in order to borrow items from the collection (50 percent). If NET Program staff supply these materials, it will be much easier for these individuals to locate and borrow items especially suited to their program's needs for nutrition information.

* Nurse consultants in the Family Health Services Pro-gram expressed more consistent interest in NET services than did respondents in other program areas. It seems especially likely, therefore, that meetings between NET Program staff and staff of the Family Health Services Program will result in a plan for facilitating each program's efforts to educate DHS clients about the relationship between food and health. More than half of the nurse consultants responding to this survey indicated willingness to participate in such meetings.

* Half (50 percent) of the survey respondents expressed interest in a NET newsletter. By developing and distributing a newsletter or brochure for program administrators to share with staff and clients, the NET Program can accommodate respondents' suggestions regarding the need for additional publicity and the need to share more information with clients.

Because there is so much potential for positive interaction and synergism among related programs within DHS, it is recommended that steps be taken to follow these suggestions made by the survey respondents. Consideration also should be given to replicating this study during the coming year to evaluate progress and identify additional options for increasing efficiency and effectiveness of NET lending library services. The expected outcome of these actions is to increase the impact of federal and state dollars allocated to support child health and nutrition in the state of Texas.

EVALUATION REPORT

Is Training the Preferred Option for Improving Compliance with CCFP Requirements?

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Abstract

Data extracted from Administrative Reviews of the Child Care Food Program (CCFP) were compiled and analyzed to identify types of CCFP compliance errors that may be amenable to correction through training. Particular attention was given to topic areas where the majority of contractors have been found to be out of compliance with CCFP requirements (i.e., eligibility verification as documented on Form 1531 and daily menu records as recorded on Form 1530). Results of several cross-tabulation and regression analyses suggested that high compliance contractors conduct more training for their providers than do low compliance contractors. Several of the common types of errors on 1531 and 1530 appear to be readily amenable to correction through training. It was concluded that investing in additional CCFP training is likely to produce noticeable improvements in program performance.

By providing materials and guidelines to encourage contractors to train more of their staff in more topic areas, Food Services Programs can expect to produce noticeable improvements in compliance with Child Care Food Program (CCFP) requirements.

Indicators of Contractor Performance by Overall Compliance

	Level of Compliance			
	Low	Moderate	High	Total
	Percent of Contractors			
Errors on 1531s				
At least one error	41	43	27	38
Multiple errors	24	18	0	14
Errors on 1530s				
Meal components	41	16	18	24
Amounts of food	50	44	41	45
	Average Scores			
Training for Staff				
Number trained	7	7	14	9
Number of topics covered	5	5	8	6

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EXECUTIVE SUMMARY

The U.S. Department of Agriculture's Nutrition Education and Training (NET) Program and its Child Care Food Program (CCFP) combine to promote children's health and prevent hunger and disease by assuring that children in child care centers have opportunities to learn about and practice good eating habits. Contract managers at the Texas Department of Human Services monitor performance and provide technical assistance to help child care centers comply with requirements that enable them to be reimbursed for serving meals to children. Training and instructional materials available through the NET Program are major resources for helping contractors understand and comply with CCFP requirements.

Purpose and Procedures. This study was conducted to identify areas where additional training may be needed. Results of CCFP review findings were combined with information collected from contractor files. Particular attention was given to areas where noncompliance has been highest over the last two years. Two questions were asked: 1) What types of errors do contract managers cite as reasons for contractors' noncompliance with requirements regarding eligibility verification (Form 1531) and daily menu records (Form 1530)? and 2) What is the likelihood that these errors can be corrected through training? The data were analyzed by using crosstabulations and regression procedures to examine relationships between overall compliance and a) types of errors and b) contractor characteristics (e.g., size of their program).

Results and Conclusions. It appears likely that additional training will correct errors that contractors often make in the CCFP:

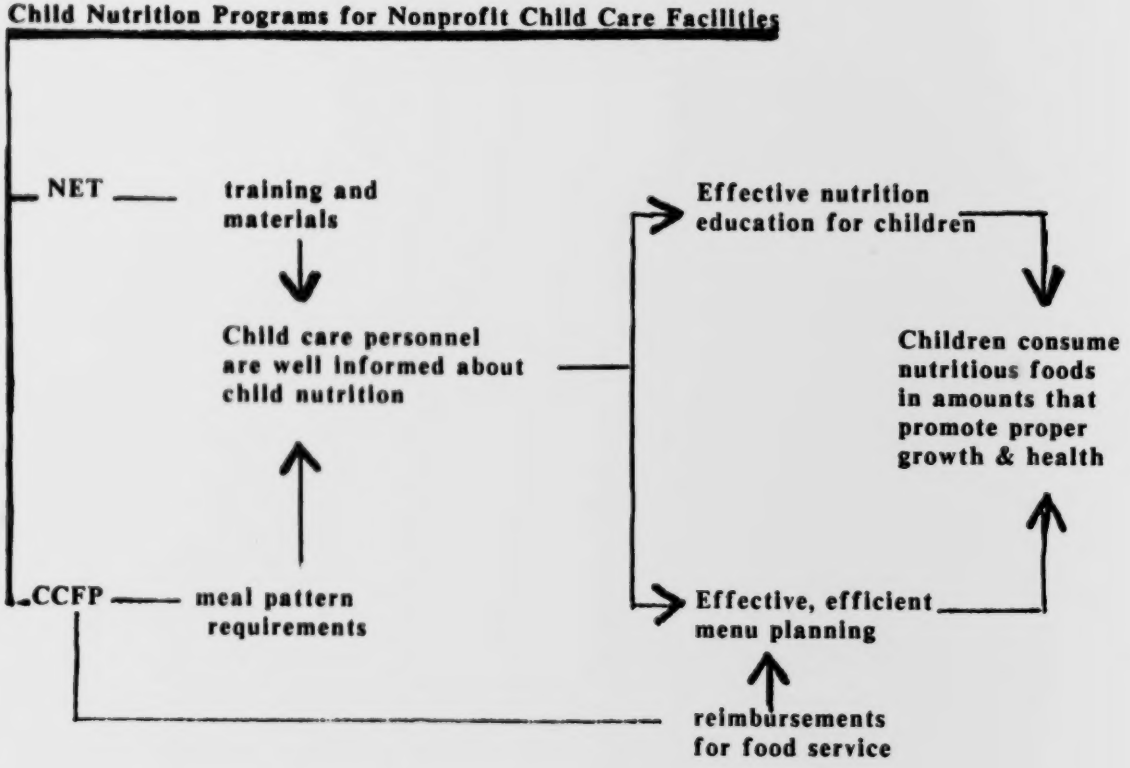
* The majority of eligibility verification errors were associated with the recording of household members names and social security numbers. The occurrence of multiple errors on Forms 1531 was more frequent in the group of contractors whose overall compliance scores were low.

* The most frequently occurring errors on Forms 1530 were associated with amounts of food served. Irrespective of their overall level of compliance, many contractors failed to serve enough food. Milk was the item most often noted as being short of the minimum. Contractors in the low compliance group often also had problems with meal components.

* Results of several regression analyses indicated that variables related to the contractor's organizational size and procedures were unrelated to compliance. Training was the only factor that predicted overall compliance. Contractors with higher overall compliance scores tended to conduct training for more of their providers covering more topic areas than did contractors with lower overall compliance scores.

Recommendations. These data suggest that training is an important process for promoting compliance with CCFP requirements. By continuing to make use of NET resources to emphasize the importance of training, Food Services Programs can expect to produce noticeable improvements in performance of the CCFP.

The Nutrition Education and Training (NET) Program and the Child Care Food Program (CCFP) complement one another in helping to promote children's health and well-being through improved nutrition.


Child Nutrition Programs for Nonprofit Child Care Facilities
NET
training and materials
Child care personnel are well informed about child nutrition
Effective nutrition education for children
Children consume nutritious foods in amounts that promote proper growth & health
CCFP
meal pattern requirements
Effective, efficient menu planning
reimbursements for food service

BACKGROUND

The Nutrition Education and Training (NET) Program and the Child Care Food Program (CCFP) are two of the U.S. Department of Agriculture's (USDA) Child Nutrition Programs. The CCFP reimburses participating nonprofit child care facilities for serving meals and snacks that meet USDA's nutrition and food service requirements. The NET Program provides nutrition information and training to encourage effective nutrition education and sound food service management in child care facilities and schools. In combination, the instructional and reimbursement programs promote children's health and prevent hunger and disease by assuring that the children have opportunities to learn about and to practice good eating habits in child care settings.

The U.S. Congress established the CCFP in 1968 to assist in providing nutritious meals for children in day care centers, settlement homes, and recreational centers in low-income areas where there were large numbers of working mothers. In 1975, CCFP eligibility was extended to family day care homes and all nonprofit day care centers. In 1987, eligibility was extended to adult day care centers.

The NET Program was authorized in 1977. Its objectives are to provide training and materials to 1) help teachers integrate effective nutrition education into the learning environment and 2) help school and child care food service personnel understand and apply sound principles of food service management. The NET Program will be considered for reauthorization by the U.S. Congress in 1989.

In Texas, both NET and CCFP are administered through the Texas Department of Human Services (DHS). DHS's Food Services Programs Branch arranges and manages contracts with nonprofit agencies that act as CCFP sponsors for licensed child care centers and/or registered family day care homes. As part of their management obligation, Food Services Programs Branch provides training and technical assistance to help contractors understand and comply with CCFP nutrition, food service, and administrative requirements. They also monitor program performance by conducting administrative reviews of each contractor at least once every four years. Results of these reviews are compiled across contractors and examined to identify common problems that may be solved by developing additional training for all contractors.

Training and materials provided through the NET Program are a major resource for the CCFP. The NET Program conducts workshops, maintains a lending library service, and distributes child nutrition related instructional materials (e.g., posters, curriculum guides, recipes, menu planning guides) to facilitate food service in CCFP facilities. Workshops often are developed in response to specific needs identified in CCFP reviews. In 1987, for example, a workshop entitled **Advanced Menu Planning** was developed to help correct menu planning problems detected in CCFP reviews conducted during 1986.

PURPOSE and PROCEDURES

This study was conducted to facilitate synergism of CCFP and NET by using results of CCFP reviews to identify areas where additional training may be needed.

* What kinds of errors do reviewers cite as reasons for contractors' noncompliance with CCFP requirements regarding 1) eligibility verification (Form 1531), and 2) daily menu records (Form 1530)?

* Does it seem likely that these kinds of errors will be corrected if emphasis is placed on increasing and expanding training for CCFP contractors?

PURPOSE AND PROCEDURES

In order to develop a more detailed understanding of common problems that may be solved through the provision of additional training, a more in-depth study of the results of CCFP reviews was made in the summer of 1988. Data extracted from the reviews was combined with information taken from contractor files to answer two questions about CCFP:

1) What kinds of errors do reviewers cite as reasons for noncompliance with requirements regarding eligibility verification (Form 1531) and daily menu records (Form 1530)? Reviews compiled in 1986 and 1987 indicated that more than 50 percent of contractors failed to comply with requirements in these two areas.

2) Does it seem likely that these errors will be corrected if emphasis is placed on increasing and expanding training for CCFP contractors? Training is the most frequent but by no means the only way to solve program performance problems. Evaluations of menu planning practices before and after the **Advanced Menu Planning** workshops indicated, for example, that other forms of assistance and guidance may be needed to amplify the effects of staff training.

Three sets of data were compiled and analyzed to answer these two evaluation questions. The first data set included compliance/noncompliance assessments in 19 areas of CCFP performance reviewed during fiscal year 1988. These data, which are maintained in LOTUS worksheets on PCs at the DHS state office, were obtained for 72 contractors-with-centers that had been reviewed during the period October 1987 through May 1988.

The second data set was constructed from the narrative and worksheet sections of CCFP review forms covering item 1 (eligibility verification) and item 8 (daily menu records)--Part I, page 2, number 1 plus the 1531 worksheet; Part I, page 7, number 8; Part II, page 1; Part II, page 9, number 7; and Part II, meal analysis worksheets. Contract managers were able to supply these data for 64 of the 72 contractors.

The third data set was compiled from information about contractors' management plans and claims forms--Form 1536, pages 1-6 with attached copy of training schedule and certificate of authority from the Application and Management Plan for FY88; front page and Form 1532 from claim for reimbursement for the month of the review. Even though the request for this information was made late in the summer and required a very short turn-around time, contract managers obliged and supplied records for 64 contractors. Data were extracted from these records to describe 1) training that contractors schedule for their CCFP providers, 2) size of the contractor's CCFP program; and 3) the contractor's management procedures including such variables as types of record keeping and frequency of reviews. These data were coded and stored in LOTUS worksheets.

Data Analysis Procedures

SAS-PC procedures were used to produce descriptive statistics, merge the data sets, and examine relationships among the variables to identify types of errors that may be amenable to correction through training.

Step 1: Determining reliability of the overall compliance score as a measure to be used as the "criterion" variable in evaluating types of errors and options for program improvement

Step 2: Evaluating qualitative and quantitative data regarding eligibility verification (Form 1531) and daily menu records (Form 1530) to identify errors that differentiate high compliance and low compliance contractors

Step 3: Performing regression analyses to determine the relative contributions that training, program size, and management procedures make in predicting or explaining overall compliance

Data Analysis Procedures

Three kinds of analyses were performed using SAS-PC software. First, the 19 items in the compliance data set were tested for reliability as scale. The KR-20 reliability formula was applied. Item total statistics and interitem correlations were examined to determine which, if any, of the items could be deleted from subsequent analyses in order to improve reliability of the scale. Factor analyses then were applied to ascertain whether different items might cluster into subscales or whether all the items "hang together" as a measure of some single variable or factor called "overall compliance". These analyses were necessary in order to evaluate the utility of the overall compliance score as a criterion variable in analysis of the other two data sets.

The second kind of analysis was a descriptive inspection of quantitative and qualitative data regarding eligibility verification (Form 1531) and daily menu records (Form 1530). Quantitative eligibility data included the number of errors in each of the six requirement areas (child's name; household members' names; social security numbers for household members; income; signature; and currency of the information on the form) as well as information about attendance. Qualitative data were the reviewer's narrative overview. These overviews were coded into 13 nonredundant categories. The categories that tended to be similar (e.g., incorrect and incomplete) were then aggregated to yield seven descriptive categories.

Quantitative data about daily menu records included the ages of children served, the frequency with which each type of food was provided, and the reviewer's conclusion about types and amounts of food specified on Form 1530 for each of the required components. Qualitative information included types of foods served, the reviewer's narrative summary, and the meal attendance comparison information found on page 1 of Part II of the review form.

These data describing compliance with 1531 and 1530 requirements were cross-tabluated with overall compliance (i.e., high, moderate, and low levels of overall compliance). The cross-tabulations then were inspected to determine which errors, if any, might be amenable to correction through training.

In the final analysis, data about contractors' management plans and procedures were introduced into simple and multiple regression procedures using overall compliance as the criterion or dependent variable and contractor characteristics as the "predictor" or independent variables. Results were inspected to determine which sets and which single variables were most useful in explaining or "predicting" compliance. To minimize testwise error, variables then were aggregated within conceptual sets (i.e., training, size, and procedure sets) by simply summing across the variables and using the aggregate in univariate tests of each predictor.

The Summary of Review Findings (page 27, CCFP review form for contractors with centers) proved to be a reliable measure of contractor compliance and was used, therefore, as the criterion variable in evaluating types of errors and options for program improvement.

Items		Item Total Correlation	Factor Loading	Percent Noncompliance
1	Eligibility Verification *	.50	.46	58%
2	Enrollment	.72	.76	30%
3	Attendance	.46	.48	13%
4	Meal Counts	.55	.56	30%
5	NonProgram Adults	.26	.27	2%
7	Title XX	.27	.28	3%
8	Daily Menu Records *	.51	.48	77%
9	Inventory	.54	.50	33%
10	Program Income	.19	.22	2%
11	Administrative Cost Verification	.59	.62	9%
12	Operating Cost Verification	.65	.69	28%
13	Procurement	.69	.68	61%
14	Civil Rights	.72	.72	64%
15	Handicapped Access	.65	.62	55%
16	Training	.60	.60	30%
17	Monitoring Facilities	.48	.44	36%
18	Maintenance of Records	.36	.35	8%

n=64 average score=5.07 (standard deviation=3.69) alpha=.84

RESULTS

The overall compliance scores (i.e., the sum across the 19 compliance/noncompliance decisions made by the reviewer and summarized on page 27 of the CCFP review form for contractors with centers) proved to be a scale with fairly high reliability. The reliability coefficient was .84. As a rule of thumb, coefficients greater than .70 are considered "good" for most research purposes.

Item total correlations also were consistently high or, when they were low, were explained by low variability in the item scores. The low correlation coefficients for nonprogram adults (.26), Title XX (.27), program income (.19), and record maintenance all can be explained by the relatively low frequency of noncompliance (i.e., only 2 or 3 percent of contractors failed to comply with applicable requirements in these areas). Items 6 (pricing program procedures) and 19 (FSEA equipment) had to be dropped from the analysis because they contained no variability: all contractors complied with applicable requirements in these two areas.

Inspection of the interitem correlations suggested that the items were fairly independent of one another. Failure to comply with requirements regarding eligibility verification, for example, does not necessarily mean that the contractor also fails to comply with requirements regarding daily menu records, $r(63)=.10$, nonsignificant.

Principal component factor analysis of the 17 items retained in the scale produced only one factor with eigen value greater than 3.00. Most of the items showed substantial "loading" on this factor. Those that did not load heavily on the single factor were those with little variability. These results suggest that the summary of review findings constitutes a reliable scale that can be used to measure a single factor called "overall compliance". This factor was used as the criterion variable in exploring the other data collected in this study in order to identify options for improving performance of the CCFP.

The average score on the overall compliance scale was 5.07 with a standard deviation of 3.69 (i.e., on the average, contractors failed to comply with requirements in at least 2 to 8 of the 19 areas reviewed). Contractors were divided into high, moderate, and low compliance groups on the basis of their overall compliance scores. Those who failed to comply in more than 8 of the 19 areas reviewed were classified as "low compliance" contractors. Those who failed to comply with 3 to 8 of the requirements were classified as "moderate compliance" contractors. And those who failed to comply with no more than 2 of the requirements were classified as "high compliance" contractors.

Errors Made on 1531s

The occurrence of multiple errors was the most common problems observed on worksheets associated with item 1 (eligibility verification) and was noted most often in the group of contractors whose overall compliance scores were low.

Percent of Contractors Making Errors

Type of Error	Level of Overall Compliance: Low (n=17)	Moderate (n=28)	High (n=18)	Total (n=63)
No option	6%	0	0	2%
Incomplete/Incorrect	6%	0	6%	3%
Technical Error	6%	4%	0	3%
Corrected	0	4%	6%	3%
Wrong Category	0	7%	6%	4%
Not Mailed	0	10%	6%	6%
Multiple Errors	24%	18%	0	14%
Total	41%	43%	27%	38%

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Types of Errors Made of 1531s

Inspection of the reviewers' narrative summaries regarding the contractor's compliance with eligibility verification requirements suggested that contractors make several types of errors. More than a third (38 percent) of the summaries included some description of the type of error made on 1531s. Some of these descriptions were easy to interpret--e.g., that the forms were incomplete or incorrect or that they had not been mailed or that children had been assigned to the wrong payment category. Other comments were more problematic--e.g., "no option" or "corrected."

The occurrence of multiple errors was noted more often than any given type of error. Low-compliance contractors (i.e., those who failed to comply in more than 8 of the 19 areas reviewed during FY88) made multiple errors more often than did moderate-compliance contractors (i.e., those who failed to comply in 3 to 7 areas). None of the high-compliance contractors (i.e., those who failed to comply in fewer than 3 areas) were reported to have made multiple errors on Forms 1531.

Analysis of Errors Made on 1531s

Problems associated with entering household members's names on Form 1531 was the most frequent type of error reported for item 1 (verification of eligibility).

Type of Error	Range	Number of contractors w/ this number of errors 1	2	3	more	Total number contractors w/errors	Total errors
Child's Name	1-15	1	3	2	4	10 of 57	45
Household Member's Names	1-51	7	7	2	11	27 of 55	187
Social Security Number	1-21	1	1	2	13	17 of 56	117
Income	1-45	5	3	1	12	21 of 56	138
Signature	1-45	2	3	1	3	9 of 57	74
Out of Date	1-17	3	4	1	4	13 of 57	49

Analysis of Types of Errors Made of 1531s

Tabulation of quantitative data from the 1531 worksheets showed that the majority of errors that contractors made on 1531s were associated with the recording of household members' names and social security numbers. Nearly half (27 of 57) of the contractors who made errors on the 1531 made at least one error entering household members' names and nearly 30 percent made errors entering household members' social security numbers. Twenty of the twenty-seven contractors who made errors associated with household members' names made more than one such error. It is also noteworthy that the total number of errors found in household members' names, social security numbers, and income reporting were quite high as absolute numbers--over 100 errors accumulated over approximately 25 (i.e., 17-27) contractors. Some contractors contributed as many as 45 to 51 of these errors by themselves.

Informal interviews with contract managers indicated that these kinds of errors are more likely to occur when parents are allowed to take the forms home to complete and less likely to occur when a staff member at the child care center assists the individual in filling in the required information.

Types of Errors Made of 1530s

Irrespective of their degree of overall compliance, substantial numbers of contractors had difficulty complying with requirements regarding quantities of food to prepare. Errors associated with meal components, however, occurred more often in the group of low compliance contractors.

Percent of Contractors Making Errors

Type of Error	Level of Overall Compliance			Total
	Low (n=17)	Moderate (n=25)	High (n=17)	(n=59)
Daily Record Keeping	6%	4%	0%	3%
Meal Components	41%	16%	18%	24%
Amounts of Food	50%	44%	41%	45%

Types of Errors Made on 1530s

When the three items coded from the overview of daily menu records (CCFP review form page 7, item 8) were crosstabulated with contractors' overall compliance scores, results indicated that, irrespective of overall compliance, nearly all contractors complied with the requirement that menu records be kept daily. The highest rates of noncompliance appeared to be associated with amounts of food served. Irrespective of overall level of compliance, more than forty percent (i.e., 41 to 50 percent) of contractors failed to meet requirements regarding minimum standards for amounts of food to prepare and serve.

There appeared to be differences among the groups of contractors in properly recording meal components. Substantial numbers of the low-compliance contractors (i.e., 41 percent) failed to comply with requirements regarding meal components.

Comments made by reviewers in the narrative overview painted a similar picture. In 34 percent of the cases they remarked on problems with serving proper components. Problems with components were noted most often in the low compliance group. Nearly 40 percent of the narratives included comments about problems with amounts served--for 9 percent, it was remarked that amounts were not documented; 20 percent were noted as serving "not enough food"; 8 percent served "not enough milk"; and 1 percent served "not enough bread." The only other comment coded from the narrative were that the 1530s were incomplete (5 percent).

An informal interview with staff members at one CCFP center suggested that the recording of proper component amounts is extremely time consuming. They also expressed reservations about the actual negative impact of serving "too little food" when one looks at it from the point of view of the individual child. If, for example, it takes a gallon plus 1/4 cup to meet the minimum standard for servings of milk, and the center serves only the gallon, the amount of difference in each child's glass may be viewed as being too little to matter.

Analysis of Errors Made in Meal Service

Inspection of the meal analysis worksheets indicated that milk was the meal component most frequently cited as falling short of the minimum quantities specified in CCFP meal patterns.

Summary of Reviewers' Analyses of Meals Observed

Meal Component	Too Little Prepared/Served	Foods Commonly Used	Percent Using This Food
LUNCH			
Milk	27%	whole milk	92%
Meat/Alternate	13%	ground beef/chicken	18% each
Fruit/Vegetable	11%	potato/mixed vegetable	19% each
Bread	6%	sliced bred	44%
Total	34%		
BREAKFAST or SNACK			
Milk	54%	whole milk	84%
Meat/Alternate	25%	peanut butter	25%
Fruit/Vegetable	18%	orange juice	59%
Bread	21%	toast/crackers/cookies	
Total			

Analysis of Meals Served

A more detailed analysis of problems associated with 1530s was developed by looking at the meal analysis worksheets in the review packets. These worksheets described the lunch menu for 63 of the 64 cases considered in this evaluation. The packets for some contractors also included a meal analysis worksheet for breakfast (n=9) and/or snack (n=8).

Inspection of the list of foods served at lunch suggests that it most frequently includes milk, beef or chicken, potato and mixed vegetables, and sliced bread. The lunch component that was most often noted as being served in too small an amount was milk: 27 percent of the meals fell short of the minimum quantities required for the milk component. In only about 10 percent of the cases did it happen that meat/alternate (13 percent), fruit/vegetable (14 percent), or bread (6 percent) were short of the required minimum amounts.

Inspection of the analysis of breakfast and snacks suggested a similar pattern. Milk was more likely to be underserved than were the other meal components. The most common breakfast foods were milk, orange juice, and toast with butter or honey. Snacks often included peanut butter with crackers and milk or orange juice.

Explaining Levels of Compliance

Information extracted from contractors' training schedules proved to be the only variables useful in predicting/explaining their overall compliance scores.

Results of Regression Analyses with Overall Compliance as the Criterion Variable

Predictor Variables	R^2	F-value	probability
MANAGEMENT PROCEDURES			
Administrative Hours			
Staff Hours			
Review Frequency			
SIZE			
Number of Children			
Number of Administrators			
Number of Staff			
Number of Meals Served			
Operating Costs			
Dollars Reimbursed			
TRAINING		3.38	.05 *
Number Trained	.04	2.27	
Number of Topics Covered	.05	1.71	

* None of the other variables made contributions that even approached statistical significance

Explaining Levels of Compliance

As a means of evaluating options for helping contractors avoid the kinds of errors noted on 1531s and 1530s, regression procedures were used to explore contractor characteristics that might "explain"/"predict" differences in compliance. As was described in the procedures section of this report, sets of variables were extracted from contractors' CCFP management plans and claims forms. These variables represented three conceptual domains: program management procedures, program size, and program training.

Several variables in the procedures domain had to be dropped from further analysis because there was no variability--i.e., all contractors used the same procedures. These variables included those that might have indicated the ability of the organization to keep adequate records (e.g., type of inventory system, procedures for collecting daily information). Variables that remained in the set were number of administrative hours, number of staff hours, and reviews frequency.

Inspection of correlations among the variables in the program size domain indicated some redundancy. For example, the correlation of total monthly attendance with total meals served was .91. "Redundant" variables were dropped from subsequent analyses. Variables retained to represent the size domain included number of children, number of administrators, number of staff, number of meals served, operating costs, and dollars reimbursed.

The two variables in the training domain were number of staff trained and number of topics covered in training provided by the CCFP sponsor for their staff and providers.

These variables were entered into two types of forward stepwise regression analyses using the overall compliance score as the criterion variable. In the first analysis, management procedures, program size, and training were treated as single variables by summing their component variables into single indices. Results indicated that training was the only significant predictor of overall compliance, $F(1,62)=3.38$, $p<.05$ (one-tailed test). Procedures and size failed even to approach conventional levels of significance.

In the second regression analysis, each variable was entered singly. The computer entered them in order based upon which contributed the largest explanation of variance in the compliance measure. Results of this second analysis confirmed that none of the procedure variables nor any of the size variables had any explanatory power. The only variables that contributed to the explanation of variance in the compliance measure were number trained and number of topics covered in training. The two factors in combination had greater explanatory power than did either alone.

Relationship between Training and Compliance

Contractors with higher compliance scores tended to conduct more training than did contractors with lower compliance scores.

Average Scores

	Level of Compliance				
	Low (n=10)	Moderate (n=13)	High (n=10)	F	p
Number Trained	7.1	7.2	14.0	2.52	.10
Number of Topics Covered	5.0	4.8	7.6	2.00	.15

Relationship between Training and Compliance

In order to further evaluate the relationship between amount of training and overall compliance, a one-way analysis of variance was conducted using number trained and number of topics covered as dependent variables with level of compliance (low, moderate, high) as the independent variable. Results tended in the expected direction: although the differences were not statistically significant, it appeared that contractors in the low compliance group trained fewer individuals and covered fewer topics in training than did contractors in the high compliance group.

Examples of topics listed on the contractors' training schedules included menu planning, menu records, nutrients, meal components, and food groups.

CONCLUSIONS and RECOMMENDATIONS

Results of this study suggest that investing in additional CCFP training is likely to produce noticeable improvements in program performance.

* Contractors should be provided with training materials and guidelines that will encourage them to schedule and conduct training for as many of their staff and providers as possible.

  - Results of this study showed training to be a significant predictor of compliance with CCFP requirements.

  - Information provided in this report about the kinds of errors that providers make in completing 1531s and 1530s can be used as a guide in determining topics that should be covered in training sessions.

* Training already initiated in Food Services Programs branch may correct the kinds of errors diagnosed in this study.

  - The video tape and workbook produced during FY88 on how to complete 1531s should be useful to contractors in providing appropriate training for their providers.

  - Because a large number of providers attended the series of NET Program workshops on menu planning during the summer of 1988, CCFP reviewers may encounter fewer errors on 1530s this year.

CONCLUSIONS and RECOMMENDATIONS

This study produced two kinds of information that should be useful in developing and implementing procedures to improve compliance with CCFP requirements. First, results of this study were highly suggestive of the importance of training as a means to promote compliance. Contractors with lower compliance scores tended to conduct training for fewer of their staff in fewer topic areas than did contractors with higher compliance scores. That finding, by itself, was suggestive of the value of training. The attractiveness of training as a preferred solution for CCFP problems was enhanced, however, by our finding that none of the other variables--i.e., program size and/or program management procedures-- that might have explained differences in levels of overall compliance were even marginally useful in predicting compliance.

The second way in which results of this study can be useful is in directing attention to the particular topics that contractors should be encouraged to cover in training sessions with their CCFP providers. All contractors should be made aware of the propensity that providers have for making errors in entering household members' names and social security numbers of Form 1531. They also should be supplied with materials and training that will be useful in helping providers understand the importance of and the procedures for calculating amounts of food to prepare and serve to meet CCFP meal pattern requirements. Problems with these computations are common across the majority of providers, irrespective of the overall compliance level of their sponsor (i.e., the CCFP contractor).

Special attention also should be given to meal pattern components. Planning menus to include the correct components appears to be a problem specific to providers in the group of contractors who have lower overall compliance with CCFP requirements. Because contractors with lower compliance scores are those who conduct less training, the hypothesis suggested by this finding is that providers who make errors in planning appropriate meal components are those who have never received training to make them aware of the requirements regarding meal components. It may be that problems associated with meal components will be easily corrected through increased attention to training.

These results confirm those of related studies and serve to endorse solutions that already have been initiated within Food Services Programs Branch. The video and workbook on procedures for completing 1531s that was produced by Food Services Programs Branch during fiscal year 1988, for example, now appears to be especially appropriate because it was developed as "home study" material that contractors can share with their providers. The series of menu planning workshops conducted by the NET Program during the summer of 1988 addresses several of the types of 1530s errors diagnosed in the present study. Because a large number of providers attended the series this summer, it may be that CCFP reviewers will encounter fewer problems with 1530s this year.

By continuing to make use of its NET resources in emphasizing the importance of training, Food Services Programs can expect to produce noticeable improvements in performance of the CCFP.

Appendix D

EVALUATION REPORT

Participation in the Texas Nutrition Education and Training (NET) Program: October 1987 through September 1988

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Abstract

Data from annual participation reports for the NET Program were submitted to goal-percentaging procedures to identify areas where special effort may be needed to encourage maximum participation in the program. Results indicated the program achieved 65 percent of its participation goals in 1988. Efforts to increase participation in the NET library by child care food service personnel will help increase the program's impact in 1989.

EXECUTIVE SUMMARY

More than 10300 individuals participated in the Texas Nutrition Education and Training (NET) Program during 1988, helping the program achieve 65 percent of its participation goals and maintain overall participation at a level substantially above the 6200 recorded in the comparison year of 1985.

Percent of Goal Attainment in 1988

	Children	Educators	FoodService	AVERAGE
GROUPS:				
Public Schools	100	50	100	80
Private Schools	100	50	30	50
Child Care	95	55	55	60
ACTIVITIES:				
Workshops	-	80	85	85
Library	95	5	35	50
AVERAGE	95	50	60	65

EXECUTIVE SUMMARY

The U.S. Department of Agriculture's (USDA) Nutrition Education and Training (NET) Program is designed to work in synergism with other USDA Child Nutrition Programs to optimize health and well-being of the Nation's children through improved nutrition. The degree to which the NET Program is effective in achieving its education and training objectives and contributing to achievement of the collective goal of the Child Nutrition Programs depends, in part, on the amount and appropriateness of program participation.

Purpose and Procedures. This study was conducted to evaluate participation in the Texas NET Program during 1988. Participation goals were set for the year based on information about the number and distribution of persons reached during the baseline year of 1985, relative size of the program staff in 1985 and 1988, and designation of priority populations in the State Plan for 1988. Actual participation figures for 1988 were compared against the goals for each activity and each target group. Average goal attainment was calculated for groups and activities as well as for the program as a whole.

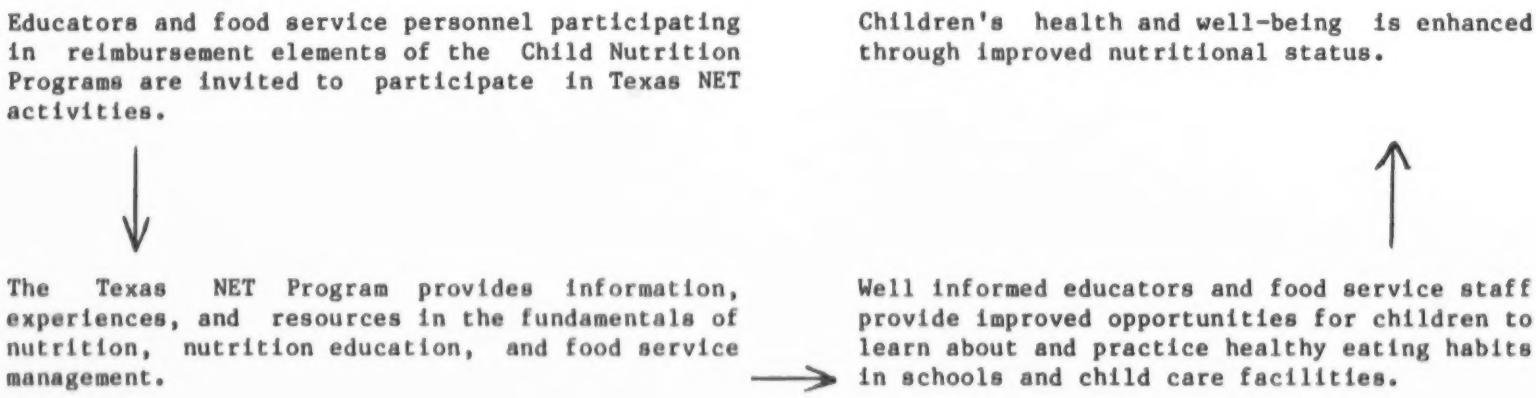
Results and Conclusions. Participation in the Texas NET Program averaged 65 percent of goals set for 1988. Overall participation remained high despite staffing limitations. The unduplicated count of participants during 1988 was 10300 compared with 6200 in 1985 while staffing was down from 9.0 in 1985 to 8.1 in 1988. Relative participation by groups of educators and food service personnel was 35 percent public school staff and 65 percent staff of private schools and child care facilities whose sponsors contract with the Texas Department of Human Services to participate in the reimbursement elements of the Child Nutrition Programs.

Workshops performed especially well in reaching educators in public schools and in attracting large numbers of child care food service personnel. The lending library showed strong performance in reaching children, especially those in public schools. The library fell short, however, of achieving its goals for reaching educators and food service personnel in child care facilities.

Recommendations. By focusing attention on options for reaching larger numbers of child care personnel through the lending library, the NET Program can work within its staffing limitations to increase program participation while ensuring that members of this important target group have access to the information and materials they need to encourage children in their care to practice healthy eating habits.

BACKGROUND

Participation is a factor that can limit or expand impact of the Nutrition Education and Training (NET) Program in Texas.


Educators and food service personnel participating in reimbursement elements of the Child Nutrition Programs are invited to participate in Texas NET activities.
The Texas NET Program provides information, experiences, and resources in the fundamentals of nutrition, nutrition education, and food service management.
Well informed educators and food service staff provide improved opportunities for children to learn about and practice healthy eating habits in schools and child care facilities.
Children's health and well-being is enhanced through improved nutritional status.

BACKGROUND

Through its Nutrition Education and Training (NET) Program, the U.S. Department of Agriculture (USDA) hopes to lay a strong foundation for community involvement in child nutrition. Established in 1977 as a supplement to reimbursement elements of USDA's Child Nutrition Programs (e.g., the Child Care Food Program), the NET Program is designed to:

* encourage good eating habits and teach children the relationship between food and health;

* instruct educators in the fundamentals of nutrition and how to convey this information to children;

* train school and child care food service personnel in principles of nutrition and sound food service management; and

* develop appropriate nutrition education materials and curricula.

To accomplish these objectives, staff of the Texas NET Program develop and conduct workshops, provide lending library services, acquire and distribute nutrition education and food service management materials, and engage in special projects to promote nutrition learning in schools and child care facilities.

The impact that these activities have on children's health and well-being depends on at least two factors: 1) the extent to which activities are successful in improving nutrition-related knowledge, attitudes, and behavior of program participants, and 2) the number of individuals in the target populations who actually participate in program activities. If large numbers of school and child care personnel participate in activities that are effective in helping provide children with better opportunities to learn about and to practice healthy eating habits, the net effect should be improvements in the children's nutritional status.

The USDA considers the number of persons reached with NET resources to be of paramount importance in managing the program. Participation data are used as a gate to program continuation. States granted NET Program funds are required to submit an annual report--the FNS 42--describing the numbers of children, educators, and food service personnel receiving nutrition education and training during the fiscal year. The report must be completed within a specified interval after the close of the federal fiscal year in order for the state to receive the program grant for the succeeding year.

In order to assure that the Texas NET program reaches as many school and child care personnel as is practical, annual participation goals are set for each of the program's major activities and for each of its target populations. Goals are based on current priorities, current staffing, and prior participation figures. Actual participation is monitored and compared against goals for the year. Information about goal attainment then is used in establishing objectives and making plans for the next year.

PURPOSE and PROCEDURES

Data used in preparing the annual participation report for the U.S. Department of Agriculture were submitted to goal-percentaging procedures to identify areas where attention still is needed to maximize impact of the NET Program.

Goals for 1988

	n	p	n	p	n	p	n
WORKSHOPS							1900
Children							
Educators	285	(.15)	95	(.05)	665	(.30)	
Food Service	110	(.05)	95	(.05)	665	(.35)	
LIBRARY							4700
Children	1175	(.25)			940	(.20)	
Educators	470	(.10)			470	(.10)	
Food Service	235	(.05)	235	(.05)	705	(.15)	
TOTAL	2260	(.35)	425	(.05)	3350	(.50)	6600

n = number of participants

p = proportion of participant total

PURPOSE and PROCEDURES

Data about staffing levels and participation in fiscal year 1985 were used as the baseline in setting goals for 1988. Using 1985 as baseline is appropriate because all of the designated NET staff positions were filled during 1985 and evaluation studies demonstrated that the program was both challenging and successful that year.

During 1985, there were approximately 6 full-time equivalent NET staff positions in support of workshops (coordinator, specialist, consulting nutritionists, and clerical staff) and 2.5 positions in support of the library. More than 2000 individuals participated in NET workshops and nearly 4000 people were reached through the NET library. The resulting staff-to-participant ratios were 1:400 for workshops and 1:1500 for library resources.

In 1988, there were only 4.9 full-time equivalent staff positions in support of workshops and 3.2 for the library. By substituting these figures in the staff-to-participant ratios, overall goals were set for 1988 at 1900 for workshops and 4700 for the library.

Information about program priorities was used in adjusting the goals for different target groups. In 1988, the State Plan indicated that approximately 40 percent of NET's effort would be directed at public school populations and 60 percent at populations that directly contract with the Texas Department of Human Services (DHS) as sponsors and providers in reimbursement elements of the USDA's Child Nutrition Programs.

Another factor considered in setting goals for different population groups was the special series of workshops conducted during the summer of 1988 to address menu planning problems detected during administrative reviews of the CCFP. These workshops were principally for food service personnel in child care settings. The relative percent of child care staff to be reached in workshops was adjusted accordingly.

Finally, adjustments were made in goals for the NET library. An evaluation of library patronage during 1987 indicated that day home providers and child care food service personnel should be encouraged to make more use of the collection. Curricula of selected workshops for CCFP contractors were amended to put increased emphasis on use of the library by members of this priority population.

Information about actual participation in the Texas NET Program during 1988 was extracted from the data bases used in preparing the FNS 42 report. Workshop participation data are maintained in computer files on the Southwest Tech system. Reports were printed listing participant roles (e.g., "private school food service personnel") by workshop title so that counts could be made for the year as a whole. Information about numbers reached through the NET library was developed using data that are extracted from the library user's feedback form and maintained in files on the Sperry mainframe computer. Actual participation was compared against goals, and averages were calculated for different sets of goals.

RESULTS

Participation in the Texas NET Program averaged 65 percent of goals for 1988.

	PUBLIC SCHOOLS				PRIVATE SCHOOLS				CHILD CARE				AVERAGE
	85	88	G	%	85	88	G	%	85	88	G	%	%
WORKSHOPS													85
Children													
Educators	64	350/285	=	100	271	51/95	=	50	1241	717/570	=	100	
Food Service	5	110/95	=	100	233	59/95	=	60	264	1374/665	=	100	
LIBRARY													50
Children	864	4517/1175	=	100	365	182/0	=	100	1289	895/940	=	95	
Educators	85	30/470	=	5	0				102	44/470	=	10	
Food Service	356	890/235	=	100	0	1/235	=	0	79	117/940	=	10	
AVERAGE				80				50				60	65

85 = number of participants in 1985 88 = number of participants in 1988 G= goal for 1988

RESULTS

Overall participation in the Texas NET Program has increased substantially since 1985. Totals for 1985, 1986, 1987, and 1988 were 6200, 9700, 10900, and 10300, respectively. In 1988, NET resources reached 5580 children, 1190 educators, 2550 private school and child care food service personnel, and 1060 parents and other individuals interested in promoting children's health and well being through improved nutrition.

Participation in NET workshops exceeded goals in public schools and child care institutions. Participation of educators and food service personnel in private schools that participate in the USDA's reimbursement programs (i.e., National School Lunch, School Breakfast, and Special Milk Programs) averaged only about 50 percent of the rather modest goals that were set for that population. There has been a notable rise in participation by educators in public schools. Approximately 20 percent of the 2660 educators and food service personnel participating in NET workshops in 1988 were public school educators. In 1985, there were 2070 participants in NET workshops, less than 5 percent of whom were staff of public schools.

The most noticeable increase in workshop participation, however, occurred in the population of child care food service personnel. Approximately half of NET workshop participants during 1988 declared themselves to be food service personnel in child care centers, sponsors for the Child Care Food Program (CCFP), or day home providers participating in the CCFP. In 1985, only about 10 percent of NET workshop participants were from this primary target group.

The NET Program's lending library was less successful in achieving its participation goals. Across groups, the library averaged 50 percent goal attainment compared with the 85 percent success rate achieved in the workshops. Nevertheless, the number of persons reached with NET library resources has more than doubled since 1985. In 1985, 3140 children, educators, and food service personnel were reached through the NET library. In 1988, their numbers rose to 6675.

The most remarkable increase for the library service was in the number of children reached in public schools. In 1988, the number of public school children reached with library resources very nearly matched the goal set across all groups--i.e., the goal for the library was to reach 4700 individuals and it succeeded in reaching more than 4500 public school children. The library fell short of its goals, however, for reaching educators and food service personnel in schools and child care facilities that participate in the other USDA Child Nutrition Programs administered through DHS. Only 162, or 15 percent, of the 1080 educators and food service personnel reached through the NET library in 1988 declared themselves to be staff of private schools or child care facilities.

Across activities, the NET Program averaged 80 percent goal attainment for public schools, 50 percent for private schools, and 60 percent for child care facilities to yield an overall average of 65 percent goal attainment in 1988.

CONCLUSIONS and RECOMMENDATIONS

Continued emphasis on increasing the library's reach to educators and food service personnel in child care facilities will help maximize impact of the NET Program in Texas.

* Participation in the Texas NET Program during 1988 remained high despite continued staffing limitations.
  - Overall participation in 1988 was 10300 which is 60 percent greater than in 1985.
  - The most noticeable growth during 1988 was in the program's reach to food service personnel--workshop participation by child care food service personnel in 1988 was five times as great as in 1985.
  - The number of child care personnel reached with NET library resources, however, fell short of goals.

* By focusing attention on options for reaching larger numbers of child care personnel through the lending library, the NET Program can work within its staffing limitations to ensure that members of this important target group have access to information and materials they need in order to encourage children to practice healthy eating habits.

CONCLUSIONS and RECOMMENDATIONS

Participation in the NET Program during 1988 remained high despite continued staffing limitations. Since 1985, NET Program participation has increased by approximately 60 percent. Staffing during 1988, however, remained lower than in 1985--down from 9.0 in 1985 to 7.4 in 1986, 7.9 in 1987, and 8.1 in 1988.

The most noticeable growth during 1988 was in the program's reach to food service personnel. NET workshops evidenced particular success in reaching this population. Workshop participation by child care food service personnel in 1988, for example, was five times as great as in 1985. Most of this gain can be attributed to the series of food service workshops developed expressly for food service personnel during 1987 and presented in sequence in the summer of 1988.

Although workshops exceeded participation goals in most areas, they fell short in reaching educators and food service personnel in private schools. Because the series of menu planning workshops conducted in the summer of 1988 were dedicated to participants in the CCFP with the series for private schools planned for the first quarter of 1989, it seems probable that there will be greater participation for this group during 1989. It is recommended, therefore, that the goals for 1989 for these groups be proportionately equivalent to the goals that were used this year.

The NET library continues to be quite successful in reaching children, especially those in public schools. As was the case in 1987, nearly twice as many children were reached through the library this year as were reached during 1985. Success in reaching children through the NET library is extremely important to the Texas NET Program because, except for the special series of children's workshops conducted during 1987, the library is the only direct reach that the NET Program has to the children of Texas.

Results of this year's evaluation of program participation reaffirms the need for placing emphasis attracting more library patrons out of the population of child care personnel. As was the case in 1987, this was an area where participation fell far short of goals.

One possibility for increasing use of the collection in this population is to augment workshops to include exercises that allow child care personnel to practice selecting and ordering materials to support their nutrition education and food service management activities. Another possibility is to prepare lists of library resources covering topics related to specific nutrition and food service requirements in the CCFP. Contract managers then could supply CCFP sponsors and providers with lists of materials to borrow for study at home to help them understand program requirements with which they are having problems. The result should be an efficient synergism of the NET Program and the CCFP in helping to assure that children are served nutritious and appealing meals in child care settings.

TEXAS NUTRITION EDUCATION AND TRAINING (NET) PROGRAM

Productivity and participation were high, and NET continued to have significant positive effect in Texas in Fiscal 1988.

	FFY85	FFY86	FFY87	FFY88
Resources				
BUDGET	294,060	294,060	295,860	315,290
STAFFING				
Coordinator	1.000	.333	.125	.750
Program Specialists	2.000	1.500	2.000	2.000
Evaluator	1.000	1.000	1.000	.850
Clerical Support	3.000	2.667	3.000	3.000
Consulting Nutritionists	2.000	1.900	1.800	1.600
	9.000	7.400	7.925	8.200
Activities				
WORKSHOPS				
Developed	2	2	3	1
Conducted	165	145	185	180
LIBRARY				
Acquisitions			180	420
Items Circulated/Month	70	100	100	150
Borrowers/Month	6	25	20	50
Catalogs Distributed	10,000	12,000	680	400
MATERIALS				
Titles Acquired	5	5	15	0
Items Distributed	9,700	10,800	12,800	17,200
SPECIAL PROJECTS				
Mini-grants/Development Contracts	3	3	2	0
Evaluation/Needs Assessment Studies	6	7	5	5
Participation	6,200	9,700	10,900	10,300

Program Effectiveness	Outcome Indicators Monitored		
1985 through 1988	Knowledge	Attitude	Behavior
WORKSHOPS			
Food...Early Choices	+ /	+ + **	- **
Nutrition & Preschool Child	+ **	+ **	- /
Nutrition & Physical Fitness	+ + **	+ **	
Kitchen Math/Food Purchasing	+ **	+ **	
Menu Planning/Kitchen Economy	+ **	+ + **	- /
Advanced Menu Planning	+ + **	+ **	
Off to a Good Start/Day Care	+ **	+ + **	+ **
Sanitation & Health	+ **	+ + **	
Planning Nutritious Snacks	+ **	+ **	
LIBRARY			
Workshop Coverage	+	+	-
Journal Articles			+ /
Distribution of Catalog			+ **
Networking	-		-
MATERIALS			
Use in Schools		+	- /
Effects on Children	+ **	+ /	-
Use in Child Care			+

Criterion referenced analyses: + + =ideal + =acceptable - =needs improvement
Statistical evaluations: ** =significantly positive / =nonsignificant